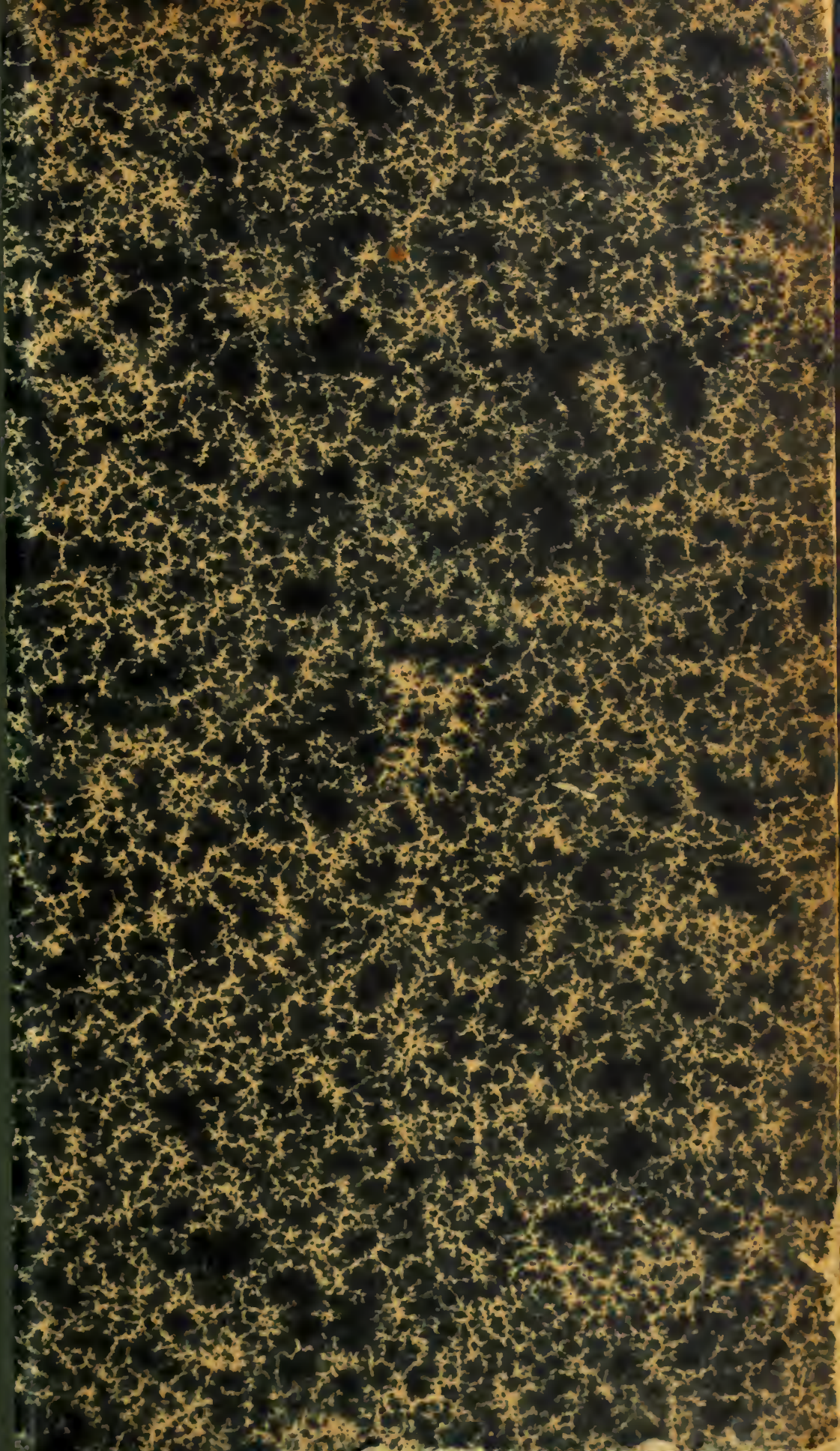


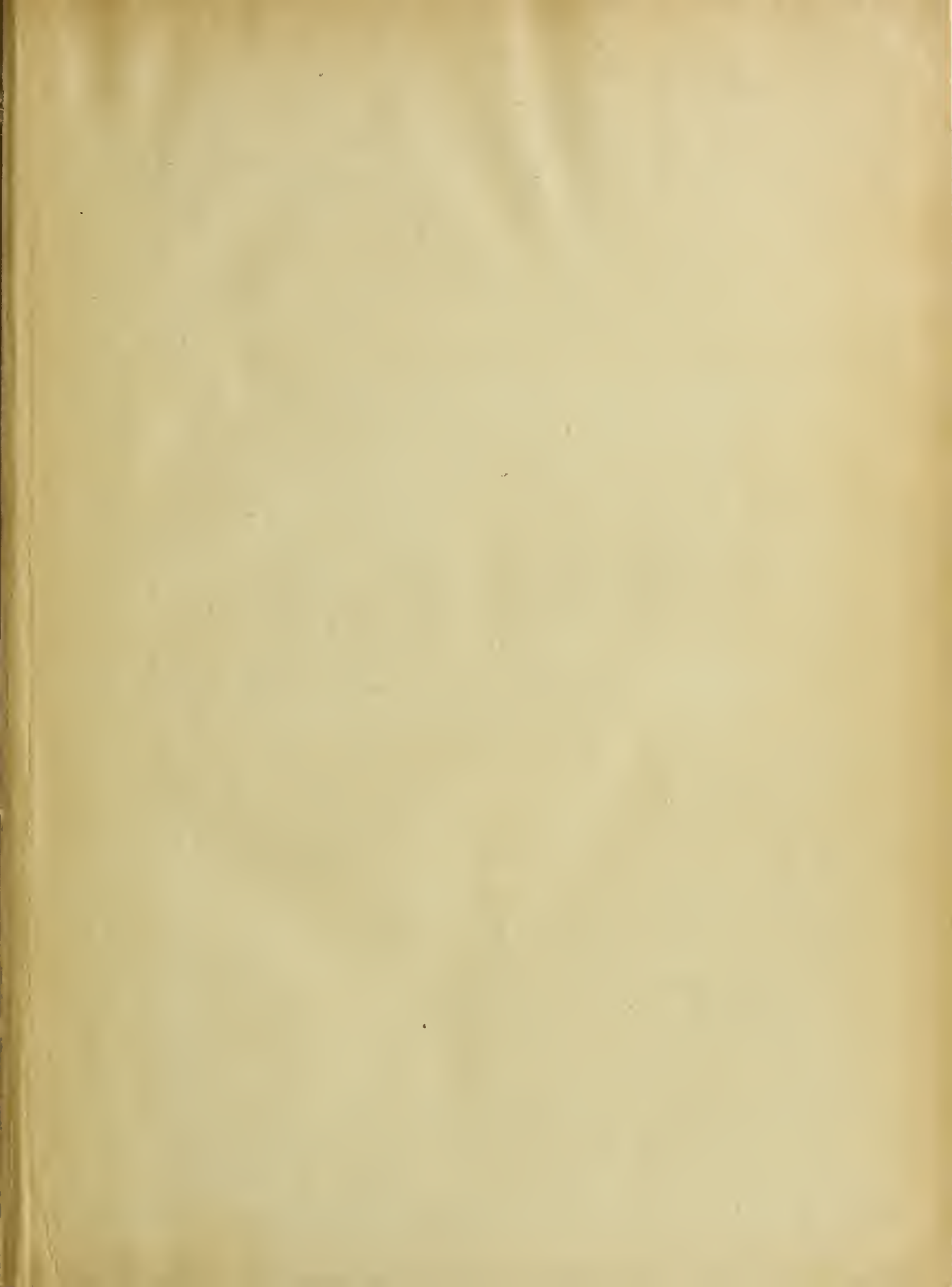
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VOLUME XV

MUSKOGEE, OKLAHOMA, JANUARY, 1922

NUMBER 1

SYPHILIS IN THE NEW BORN*

R. M. ANDERSON, M. D., and E. L. YEAKEL, M. D.
Shawnee, Oklahoma

This paper is to briefly discuss our findings in regard to syphilis as manifested in routine examination of three hundred babies delivered in private practice, including a Wassermann made at birth on blood from the umbilical cord. Although there is considerable difference of opinion as to the value of a Wassermann from the umbilical cord (1, 2 and 3), in our hands as checked against the parent's serum, it has proven of inestimable value. True there may be a Wassermann negative interval in hereditary as there is in acquired syphilis, but in the new born the reactions are usually either clean cut positive or negative. The doubtful reactions occurring in cholesterinized antigen alone we have disregarded unless there is clinical evidence or parental history.

In our series we found thirteen babies that gave a positive Wassermann, a percentage of 4.3, fairly closely paralleling that of Rose and Wright (4). We have arbitrarily divided these into three types:

(a) Four were born with marked symptoms and a parental history, of these, three died and one is yet living.

(b) Four did not have obvious lesions at birth but developed symptoms in three weeks to one year. All showed enlarged spleen and moderate anemia soon after birth. Of these one developed snuffles, another epiphysitis and a third a thickened, brownish infiltration across the right buttock, hip and soles of feet as described by Krost (5). The fourth disappeared from our community. In this group a syphilitic history was denied by both parents in two instances. But in three cases both parents were positive, while in one, only the father was tested and he showed a weakly positive reaction.

(c) Five cases presented no symptoms but a positive Wassermann and late splenic enlargement. Both parents were positive in varying degrees, but stoutly denied the infection.

*Read in Section on Pediatrics and Obstetrics, Oklahoma State Medical Association, McAlester, May 18, 1921

In our series we have no instance of syphilitic manifestations and a negative Wassermann.

Upon finding a positive Wassermann or other signs of congenital syphilis we have obtained blood from both parents and other children when possible. As many parents will vigorously deny any leucic history and especially if the baby is born alive, undeformed and apparently well, we have not found it advisable to wait ten days or two weeks before making our Wassermann as advised by Fordyce and Rosen (3), but recheck by taking another at the time we examine the parents. We find we must have something definite before we can get an admission from either parent or persuade them to submit to examination.

When a man has forgotten that little sore he had years ago and thinks he sowed his oats without reaping, at this time he is not highly elated to be told that he is not so lucky as he thought.

We have had several cases where it has been necessary for us to surreptitiously get the blood for the test. After all for obvious reasons there is considerable difference in ward patients and private practice. I have in mind a Christian Science family that "let loose the dogs of war" when we obtained a doubtful reaction on their infant and suggested examination of the other members of the family. We have not seen any of them since.

Macroscopic examination of the placenta has failed to reveal any definite lesions. We do not believe any dependence can be placed on the ordinary placental examination as careful study with the microscope is necessary.

Although the text book picture of infantile syphilis is one of easily recognizable and severe symptoms it is necessary to emphasize the fact that an infant may be apparently in perfect health and still be syphilitic (6). A positive Wassermann may be the only clue which explains the later anemia, enlarged spleen, developmental or nutritional defects.

The virulence of the infection may have been greatly influenced and attenuated by partial or incomplete treatment, by weak strain of spirochetes or by what we believe to be the

greatest factors; first, the development of a partial immunity as is evidenced by the final living child which follows a series of syphilitic abortions or stillbirths; and second, the possibility of a gradual syphilization of the race with a predominance of the nutritional and nervous manifestations. The gumma seem much more rare than in years gone by, probably because the disease is recognized and treated earlier.

Manifestations of syphilis in the new born are as varied as in the adult and if we expect and wait for definite evidence as snuffles, fissures, cutaneous eruptions etc., to make a diagnosis, we are going to overlook much congenital syphilis and the later the diagnosis the more permanent disability will remain, as we know we can only arrest the progress of the disease and cannot replace the damage that has already occurred.

The children born with violent and easily recognizable symptoms usually die early in infancy, often in spite of vigorous treatment (2).

1. Baby T. F. W. Mother was not seen until in labor but gave a history of many miscarriages, three stillbirths, and one child that lived a few hours. This was the fifth child. The baby was born with a shiny peeling almost maceration of soles and palms and a diffuse eruption which in the next twenty-four hours became bullous and almost covered the body. The child was very weak but we used mercuric chlorid grain one twelfth intramuscularly in the buttocks. Child died sixth day. Father gave definite history of syphilis in his youth and a four plus Wassermann.

2. Baby B. I. Normal delivery. A pale, weak voiced indian infant with enlarged spleen. Marked snuffles developed in the first thirty-six hours with linear ulcerations on each side of mouth by end of first week. Mercury in chalk grain one-fourth. tid., was varied with mercurial inunctions dram one fourth. At second week Salvarsan grams .05 were given intramuscularly in buttocks. Discontinued treatment because of malnutrition of which it died at four weeks.

Infantile syphilis differs in no essential from secondary syphilis in the adult, as it produces specific lesions and affects the nutrition and development of both. But in the new born the reserve vitality is proportionately less than in the adults, and the disease although in itself not fatal, may produce changes that render the infant an easy prey to intestinal, pulmonary or other complications. In adult life active syphilis may cause a loss of weight and development of anemia that is not considered of great importance, while similar changes in an infant may easily lead to its death.

3. Baby R. L. V. No symptoms but

positive Wassermann at birth. Parents syphilitic. Father with tertiary manifestations. Parents practically refused treatment for the baby although they pretended to carry out our orders. At one year the child was brought to the office with an epiphysal separation of the right radius due to the mother lifting the child by its right arm. Lesion healed promptly under mercury with chalk, grain one third. tid. Parents refused to let us use salvarsan or mercury by needle. The baby appeared to be gaining in health but at the age of two years died in a few days of an entero-colitis following a mild error in diet.

Development may be seriously interfered with in intrauterine life and the infant born with marked changes in the osseous system (7), a tendency to fractures upon the slightest provocation as noted in the previous case, or malformations of various abdominal viscera. Later hereditary changes may include the saber tibia, syphilitic necrosis etc.

4. Baby K. Some two years before the birth of this child the mother appeared at the office with a syphilitic arthritis of the right elbow. Refusing a Wassermann and not liking our diagnosis she left us to go elsewhere and was not seen again for over three years at which time she returned bringing her fifteen months old child with a lesion of the right tibia which she had been told was chronic osteomyelitis. The baby's Wassermann, as was that of both parents, was strongly positive and it is needless to say that the lesion healed rapidly and completely under Salvarsan and Mercury.

Syphilitic nervous manifestations usually are late but may show in infancy in the form of convulsions, low grade meningitis or the so-called Infantile Tabes.

Cardio-vascular changes we have not encountered in infants, but they do occur in older children as a cerebral arteritis (8) and cardio-vascular instability is at times a syphilitic remnant.

5. Baby A. Mother had four miscarriages, carrying one child seven and one-half months at which time she was delivered of a macerated infant. Became pregnant and at the fifth month both husband and wife were intensively treated, treatment of course being carried on long past the time of delivery. At term an apparently normal child weighing four pounds was delivered whose Wassermann was negative, but on whom immediate antisiphilitic treatment was started and has been carried out off and on until the present. The child is now five years old and with the exception of a mottling of the skin at times and a peculiar red flush over face and neck when nervous or excited there has never been any evidence of lues.

Repeated Wassermanns have all been negative.

Treatment of syphilis in the new born must depend primarily on the condition of the infant and not upon the presence of syphilis. Usually nutritional management is the most important factor and the question "is the infant gaining in weight" must occupy a front position, as an infant clinically cured of syphilis but dead of malnutrition does not reflect upon our good judgment (9). Our aim must be two-fold, first to arrest the progress of the disease by any method that will least unbalance the metabolism; and second, to build up the nutrition and natural defences as best we may. Where possible salvarsan or neo-salvarsan intravenously, in doses ascending from .02 grams of salvarsan and .05 grams of neo-salvarsan once a week in conjunction with mercury with chalk grain one third. tid. varied with mercurial inunction dram one-fourth every other day, is we believe the method of choice. The method of Fordyce and Rosen (3) using mercuric chloride and neo-salvarsan we have found almost as satisfactory but painful. Comparatively, infants will tolerate larger doses of mercury than they do salvarsan, although the most spectacular results are obtained with salvarsan.

The parents' horror of a protracted course of salvarsan, especially when we must cut down upon the vein, has lead us to use the arsenical preparations intravenously only in selected cases where we have the full co-operation of the parents. Severe reactions following salvarsan are rare but gastro-intestinal disturbance has been common.

Hughes' (10) method closely parallels ours as she uses intramuscular injections of neo-arsenobenzol plus mercury and chalk by mouth.

We are watching for cases upon which we have the courage to use the needle, and method of Goldbloom (11) introducing salvarsan directly into the longitudinal sinus.

Silversalvarsan we have not used.

Although we realize that deductions are faulty when made from so small a number of cases, yet by grouping our experience with syphilis in the new born, children and adults, we believe we can come to a few conclusions that are of value.

First. An infant may show no signs of syphilis but a positive Wassermann.

Second. Splenic enlargement and anemia are the most constant early findings.

Third. The Wassermann when properly rechecked is of great value in infants.

Fourth. Treatment must depend upon a correct balance between the antisyphilitic agents and the nutritional needs of the infant.

Fifth. Intramuscular injection of mercuric

chloride or neo salvarsan is a satisfactory method of treatment.

Discussion

Dr. J. R. Burdick: Tulsa. In these cases of syphilis I think where we make our greatest mistake is not going after them thoroughly at the beginning. We let them go along; we are too apt to let them drift. If we are going to get results in these cases, especially these early cases, the thing to do is to go after it very thoroughly and be thorough in our treatment I think the most common fault we have is the tendency to wait instead of being very thorough at the beginning.

Dr. A. L. Soloman: Oklahoma City. There is no doubt but what we have been a little negligent regarding syphilis in the new born, especially with our better class of patients, where we don't know just how to broach the subject. Many cases come to us from malnutrition which show no classical picture of syphilis, yet if we go thoroughly into the case there is a great chance that we might do the patient a lot of good if we do a Wassermann. However, I do not believe we should place too much dependency in a negative Wassermann in a baby. These children should be treated, as Dr. Burdick has said, early and long. As we find the child goes along seemingly well, and we leave them and the family concludes to themselves the child was well, and we never see them any more.

In the matter of treatment, I want to say that so far as salvarsan and neo salvarsan is concerned I employ it with great fear and trepidation. I don't like it. I have perhaps had better results from bichloride than I have from other forms of mercury, getting perhaps less intestinal disturbance. That is the thing we have to watch out for in these children. They are secondary malnutrition cases, and it is along this line that many of them snuff out. The bichloride of mercury forms a very suitable method of treatment.

Dr. A. C. Hirshfield: Oklahoma City I have just one thing I want to say in this connection, and that is the prevention as far as possible in this business of the syphilis of the new born; that is, I mean, treating it before the baby is born, a month before, if possible. Every pregnant woman, when she first presents herself for examination should have a Wassermann. I realize that is not always practicable. It can only be done invariably at clinics, perhaps, but if a man is tactful I think he can in the majority of cases obtain a specimen of blood for a Wassermann reaction. If he will do this he will be surprised at the number of 2 and 3 and 4 plus Wassermanns he will get when there has been no history of syphilis or no demonstrable lesions. A woman

may have a syphilitic taint and give birth to a syphilitic child without having chronic syphilis.

I think perhaps we don't need to tell the mother what this blood test is taken for. She must realize it is for so-called venereal disease, though I think we would probably get farther by not speaking of syphilis as a venereal disease, and as a blood test we should always be on the lookout for it.

Dr. W. A. Fowler: Oklahoma City. I think that Dr. Anderson and Dr. Yeakel's office over there, in connection with the paper, bear out the position of Williams, that there should be a routine Wassermann examination. We all won't need to say it can't be done. It can be done. Four per cent of the cases have syphilis. Williams says that more than twenty-five per cent. of fetal deaths are due to syphilis. If that is at all a criterion to go by, we are absolutely criminal in not doing Wassermanns, not that the Wassermann is infallible at all, but it is so easily diagnosed. We should also remember in connection with the diagnosis that statement is true that 80 per cent. of reported abortions and 86 per cent. of the macerated fetal deaths are syphilitic. Personally I don't think that the percentage of syphilis in my practice will run up to the four per cent. I think it is about one per cent., but I haven't had a large experience with cases, and perhaps the next hundred or two cases will bring the percentage up.

We do Wassermanns routine in our clinical work and private work both.

Dr. W. M. Taylor: Oklahoma City. In regard to our Wassermanns, doing Wassermanns from the cord, it has been said, is practically the same as doing it from the mother's blood. Is that so, Dr. Yeakel?

Dr. Yeakel: I don't believe so.

Dr. Taylor: I have heard it discussed, but I believe that the consensus of opinion is that it is not true. But the peculiar thing to me is that in so many of our cases of congenital syphilis we will see a full-term well-formed baby born, perhaps with the history that the mother six or seven years previous to that has had a miscarriage, has not been pregnant in the interval, and then gives birth to a full-term baby. In about four or five weeks this child begins to show undoubted lesions. Our clinical picture is so typical we can make a diagnosis without a Wassermann, and often we don't get a Wassermann for three or four weeks after birth. That is true, isn't it?

Dr. Yeakel: Yes, sir.

Dr. Taylor: And then get it later. I would like to know what the theory is, or the consensus of opinion is as to why it is. I know that some time ago one of the men from Mayo's Clinic made that statement, but he didn't explain why.

In the treatment of these babies, just as Dr. Solomon mentioned, I have often wondered how I was going to give mercury, for mercury produces malnutrition and intestinal disturbances. I have worked along very carefully with these cases. I find I often try to give them mercury in small doses such as we could possibly get results from, and work it up, and then get intestinal disturbances, and then go back and feed them again, and then begin with the mercury again. It is a very difficult problem to handle.

In choice of the methods of administering the arsenical preparations I notice the Doctor mentioned the use of salvarsan intramuscularly. I wonder if he doesn't get a good deal of irritation from that; and in the treatment that Fordyce has recently suggested, that of neo-salvarsan, he says he has been able to use it by deep gluteal muscular injection with very little irritation. He also mentioned the use of mercury. I have never used that preparation of mercury. The family history of previous miscarriages always leads at any rate to the suspicion of syphilis in these babies. As to the use of the salvarsan or any of the arsenical preparations in the longitudinal sinus, I don't believe we get any more reaction in using the longitudinal sinus than in the vein.

Dr. W. W. Wells: Oklahoma City. In the treatment of these cases, it looks to me like it should be begun with the mother. Just here lately we took 20 Wassermanns from 20 unfortunate girls, and out of the 20 we had 6 positive and 6 doubtful. That is a pretty high percentage. The 6 doubtful of course will be run over. The others are under treatment at the present time. We hope to be able to bring this society something along that line later. Of course the University Hospital has been making Wassermanns routine, and those cases have been under treatment.

Now it has been my personal experience that all new born babies that show manifestations of syphilis at birth, and I notice the essayist bears that out, nearly always die. The treatment seems to have to be such a heroic treatment, with the patient's resistance such that it will stand the treatment. So, I simply make that remark, that the mother should be treated before.

THE MODERN METHOD OF TREATING SYPHILIS IN INFANCY*

C. V. RICE, M. D.

Muskogee, Oklahoma

The origin of Syphilis is unknown but we know from medical history that it existed in ancient times and it became pandemic in Europe toward the end of the fifteenth century though the true cause of the condition was not discovered until 1905 by Schaudinn and was called *Spirocheta pallida* by him. Later it was shown to belong in the class of protozoa and it was given the name of *Treponema pallidum*.

The organism is present in the lesions of Syphilis at all stages. It is pathogenic, for man, monkey and for the rabbit. The transmission takes place before, during or after birth. When infection takes place before or during birth, it is described as congenital syphilis, and after birth as acquired syphilis. It occurs in about 5% of our infant population and about 3½% of all infants deaths are due to syphilis. The transmission is very puzzling and interesting. Dunn, in his 1920 edition, says: "The disease is transmitted always from a syphilitic mother to her offspring; it cannot be transmitted from the father to the ovum by means of the spermatozoa." Griffith, in his 1919 edition, says: "It may be transmitted by either parent or by both, but in the large majority of cases, the father is the original source." Williams, of Hopkins, reports a case of a negro woman who had several healthy non-syphilitic children and then gave birth to twins—one a syphilitic and the other a non-syphilitic. The woman later gave birth to children who were non-syphilitic. The history of the twins shows that the non-syphilitic baby was that of her husband while the syphilitic baby was the offspring of another man who showed a positive Wassermann. The bearing of non-syphilitic children by her own husband, later, would show that a mother may give birth to syphilitic babe and not have the disease herself and that it can be transmitted to the ovum by means of the spermatozoa.

The object of this paper is to outline a method of treatment used at various children's hospitals, so we shall not go into the symptoms or the early or later manifestations. The old method of treatment was long and drawn out and it was hard to keep the patient under observation closely and long enough to effect a permanent cure. With the mercury rub and blue powder, the symptoms would all subside beautifully, and it would take much art and influence to persuade the mother to continue the office visits and to keep the child under careful observation. With the discontinued

visits, the child would go out into the world, an uncured syphilitic to be a chronic invalid, to die early in life or worse, to later become a lunatic.

The first method we shall take up is one that has been used at the Vanderbilt clinic with very satisfactory results. Mercury and neo salvarsan are used intramuscularly in the gluteal muscles. If the infant is very much underweight, mercury alone is given at weekly intervals and as the infant improves, the injections of neo salvarsan are started. The mercury used is mercuric chloride, put up in individual collapsible ampules in doses of from 1-10 to 1-8 grain and may be obtained by your druggist from any of the pharmaceutical houses. The object of a soluble mercury in oil is to favor slow absorption of the drug. An ordinary 1-2 to one inch, 19 or 20 gauge mercury needle is used, carefully observing all aseptic precautions. The injection is made about one inch from the intergluteal fold near the upper angle. These injections are made weekly for eight weeks and are then followed by a rest interval of six weeks. The neo salvarsan may be obtained in glass ampules of 0.1 to 0.2 grams and large enough to hold 5 cc of the solution. The drug may be dissolved in freshly distilled water in the original glass ampule, using about 3 cc of the water. To prevent leaking of the solution into the subcutaneous tissue, a special devised needle from 1-2 to 1 inch in length of 19 to 20 gauge with an oval concave shoulder which fits closely over the site of injection, is advised and may be obtained from the Metz Co. By using this type of needle, one is sure of holding it in place regardless of the child's movements. The site of injection is the same location as for the mercurial treatment. These injections are given every week for six or eight weeks, followed by a rest period of from four to six weeks.

The next method is one that is used at the Children's Memorial Hospital, Chicago, at the Washington University Dispensary and in the St. Louis Children's Hospital. It is the one which I have adopted and use successfully. The mercury used is mercuric chloride of 1% solution in a normal saline solution. At each weekly visit, the infant is given 1-2 minim of a 1% solution of mercuric chloride for each 21-2 pounds of body weight injected intramuscularly. Mercury with chalk is given three times daily by mouth and about one fourth of the regular dose that you would have given if mercury were not used intramuscularly. Mercury may or may not be used with neo arsphenamin. As both drugs are irritants to the kidneys, some men claim that one only should be used at a time, but I have been using both and have had no bad results. When I stop the mercury and the neo arsphenamin for the rest

*Read at Muskogee County Medical Society, November 28, 1921

period, I put my infant on tonics, especially some form of iron. If possible, the child should be on the breast, as malnutrition occurs with such frequency, it may be classed as one of the symptoms of the disease. Usually the nutrition improves with antisyphilitic treatment but occasionally the treatment will have so harmful an effect that it will have to be greatly modified or suspended until the general nutrition of the baby is improved. I prefer neo arsphenamin in treating infants, as it can be given safely in small volume, it needs no neutralization, and the mechanical difficulties are less by the use of a syringe than by the gravity method. If a larger dose of the neo arsphenamin is used, it has the same curative results as arsphenamin, therefore, the choice is a matter of preference on the part of the physician. In the intravenous method, any visible vein may be used. External jugular veins are easily reached and suitable scalp veins may be used, but I personally prefer the longitudinal sinuses. However, some men condemn this avenue, stating that due to the rachitic head in some infants, we are not always able to enter the sinus. This might happen in a large clinic with all classes of people, but seldom if ever in our own private practice, and as a rule we see these babies in the first few weeks of life, when there should be no trouble in entering the longitudinal sinus. The technic is simple. The infant is wrapped in a sheet and placed on the table with the head in a transverse position and brought to the edge of the table. Two assistants are necessary—one to hold the body firmly to the table and the other to hold the head steadily in the transverse position. The anterior fontanelle is shaved and painted with iodine and we are now ready for the operation. A 10 cc Luer syringe with a 19 gauge needle is used and it is filled with the solution and air expelled. We enter the sinus in the median line at the posterior angle of the fontanelle, pushing the needle downward and backward. When we have entered the sinus, there is a sudden lessening of the resistance and the blood will immediately appear in the syringe with a gentle pulling on the piston. We then inject the fluid slowly and if our technic has been good and the proper distilled water used, there should be no reaction.

The third route of administering neo arsphenamin is by the rectal method which, to me, seems impractical and unscientific for we all know how difficult it is to have an infant retain any solution per rectum.

In closing, allow me to quote an abstract from the British Medical Journal, November 16, 1918: "A syphilitic pregnant woman can be treated with salvarsan up to the day of con-

finement with safety and every advantage. A mother whose blood gives a positive Wassermann reaction may, after treatment, be delivered of a child whose blood gives a negative reaction. The child may continue to thrive and give a negative blood test. Syphilitic children can safely be treated with salvarsan immediately after birth. Salvarsan, combined with treatment by mercury, has a more certain and quicker action in producing a negative Wassermann in the child than in the mother. In nearly all syphilitic children born alive, treatment can convert a positive Wassermann reaction into a negative and such children appear to become healthy and show a regular weekly gain in weight." I also wish to state that the earlier the treatment in infants is begun, the better are the chances for cure. The Wassermann test taken at birth is not to be relied upon. A negative test in the face of clinical signs and symptoms demands active anti-syphilitic treatment.

Treatment.

The rational treatment of these cases calls first for their relief from the burdens of life as far as this is possible. Dr. William Mayo states that in the treatment of these cases we cannot change society. While in a measure this is true we can, however, modify the home environment. The pronounced cases should have the advantages of a neurological institution, especially conducted for this class of quiet patients. If the family cannot afford this, then the home should be put in order. As a rule, in the economy of nature, for ages the mother has been the slave of the home. To call upon her for help appears to be an innate quality of the children, even the larger ones, and in some cases the father has inherited the same attribute. For the good of the home the children should be taught self reliance as early as possible. Observation of the home will find this the exception and not the rule. Why not elect the mother queen of the home? At least, in a measure, this can be done in many homes to their everlasting benefit. The delightful task of helping self and mother at the same time is a happy appeal to the home if properly made. The mother's monotonous and never-ending home duties should be broken into by frequent trips in the fresh air, to places of entertainment and amusement, and even to a summer's rest in the mountains.

In the medical treatment a thorough history should be taken, including every important detail of the patient's life followed by a medical examination, systematically made, from head to foot with laboratory findings and the report of the findings of specialists, if thought advisable. If this examination has not resulted in a positive diagnosis a subsequent examination

should be made. It is of first importance that any physical cause of disease should not be overlooked, for many of these patients have been operated for diseases they did not have. If in doubt it is best to wait. When reasonably positive diagnosis has been made, a tactful and impressive talk should be made to the husband or the nearest friend to gain more knowledge of the case, and to enlist cooperation in the treatments. He should be told that rest, freedom from worry, trips from home and the most considerate treatment are necessary for the recovery of the patient. The sexual life should be gone into fully to determine if it had any relation to her present sickness. He should be made aware that the sickness of his wife is chronic in character and that it will take patience on the part of all concerned to restore her health. Following this an earnest appeal should be made to both patient and husband. If the examination has not revealed any physical cause of disease, a kind, impressive, hopeful talk will enlist the hearty cooperation and confidence of both patient and husband. Contrast health in the home with sickness in the home and paint a picture that will make health shine with superlative refulgence. Speak of the bad influence of letting fear and anxiety abide in the heart when there are no cause for fear and anxiety. Paint a picture of the happy, healthy mother in the home with her sparkling eyes of love and her inspiring hopeful face, and the influence that such a mother has on the dispositions of the growing children. Assure the mother that she is going to get better and that she must get better for the sake of the loved ones at home. Speak of her as being queen of the home and the importance of having the flowers of helpfulness and self reliance blossom early in the hearts of her little children. If patient has increased nervous irritability, give a prescription containing a bromide chloral and pascarnata as a temporary sedative. Study her case in relation to endocrine therapy and try its virtues. Rest and an elevation of spirits will help the condition of the glands of internal secretion. Meet any other minor indications that may arise in her treatment and request her to call at your office in two or three days. In all probability you have given the anxiety neurosis and the fear neurosis a solar plexus blow. Many of these cases are chronic in character and habits are formed that take time and patience to remove. This should be explained to the patient and husband and they should be told that you desire to see the patient often until she has permanently improved.

THE CHILD-BEARING PERIOD.*

J. A. HATCHETT, M. D.

El Reno, Oklahoma

Of all the relations of life, with the duties and obligations growing out of those relations, the child-bearing period in the life of a woman transcends them all in importance. So sacred are its duties, so binding are its obligations, so self-sacrificing are its devotions and so deep and tender are its affections that it is no wonder that so many mothers break down nervously and physically in the performance of the most vital function of motherhood. The stress and strain incident to the performance of the multitudinous duties of motherhood puts the intensive test to the mother's physical and mental endurance and many sooner or later have their period of exhaustion. It is a fact of common observation and experience that some women have the natural endowment to withstand the test of this period much better than others and it is also well known that the health of others is such that they should not assume the responsibilities of maternity. It is a delicate duty to eliminate the unfit, especially when the mother heart craves to exercise the basic function of her sex; but for the ultimate good of all concerned and to promote the sum total of human happiness under the advantages of the most scrutinizing guidance, this should be done. Race development, fewer and better children are conceptions that are rightly becoming prevalent.

While we cannot agree with Dr. Mauriceau that pregnancy is a disease lasting nine months, neither do we hold to the opinion that child bearing is a natural process in the sense that a midwife can attend the mother in labor without the aid of a physician unless some pathologic condition should arise requiring his assistance.

Inquiry into the facts of the fitness of a woman to become a mother finds all degrees of health, strength and adaptability from ten percent of women who are sterile to those whose child-bearing period, adorned by its many healthy and happy children, is passed through like the singing of a beautiful song with just a few sad refrains. She passed through pregnancy, labor and puerperium, nurses her young at the breast, enjoys an unusual immunity from infections, lacerations, toxemias, nervous breakdowns and other complications, gives her many children good maternal care in every way through the period of infancy, childhood and adolescence and comes through it all a happy and healthy woman with an uneventful menopause and climacterium. An examination of this woman at forty-five

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finds no lacerations of the vagina or cervix of consequence—vagina like a virgin's, with no flabby relaxation and internal genitalia negative.

It is rare for a woman of this type to have lacerations of either vagina or cervix to a pathologic extent. Many years ago lacerations of the genitalia were attributed to the carelessness and inefficiency of the physician. He didn't support the perineum aright. We know now that many vaginal tears are unavoidably occurring in the primipera to the extent of requiring repair in at least two labors in five. It is well to bear in mind that the musculature, fascia and elastic tissue bear the stamp of heredity on them with a tendency to tear and relax in some and a tendency to stretch and rebound and maintain the integrity in others. Physicians can readily call to mind these cases in their practical experience.

A tear is predicted in a small woman with a diminutive appearing vaginal orifice, other conditions being equal, as size of child's head and shoulders, character of labor, etc. At the dilatation of the genitalia the inherited vital rubber comes into play, the head passes through the parturient canal and the vagina rebounds like a piece of rubber relieved of tension and there is no tear. The case of antithesis will be as follows—a large woman in all proportions, one in whom a physician would least expect a tear, infant either usual in size or smaller. When the head passes through the parturient canal the dilatation of the soft parts is found to be defective and the perineum gives way down to the sphincter and requiring four or five stitches. The cause of this tear is generally given as rapid labor in a large woman with a small child.

It is not usual for a patient to pass through the child-bearing period as fortunately as the first mentioned, but nature blesses some women with a well balanced potential in harmony with the demands of maternity. How much light the science of endocrinology throws on this question we cannot say, but as pregnancy is accompanied by endocrine changes and some of its pathology is attributed to discrimination it is not unreasonable to suppose that a woman's ability to pass easily through the child-bearing period may depend in no small degree upon the integrity of the glands of internal secretion.

It is probably not best to put too much emphasis upon the saving virtue of nature which has evidently been modified in no small degree by the impress of society but to emphasize the importance of armed expectancy that does not meddle but promptly detects pathologic conditions and makes an intelligent effort to relieve them.

It is sad to contemplate that our country in the past year has lost 20,000 mothers in consequence of the various pathological complications of childbirth. This should admonish the medical profession to use every endeavor to detect pathological conditions early in gestation or even before if possible as physical condition may be such that the patient should not risk a pregnancy. Frequent observation of the patient by the physician during pregnancy is very important. It gives the physician a chance to note the condition of the patient from time to time, examine the urine, inspire confidence and become better acquainted. Keeping in close touch with the patient is an advantage worth cultivating.

Every physician should keep in his office an obstetric record containing a brief history, a general examination and an obstetric examination of each case. This is easily done and when once adopted will prove so valuable and satisfactory that it will not be discarded. In obstetric practice the tactful, kind and earnest physician can plant his thoughts and wishes so deeply in the heart of his patient that she will do his bidding with delight. Some of these cases are primiparas—know little about their condition except what they have picked up in a desultory way and will be interested in asking many questions. They long for the help of the kind serene physician who takes an abiding interest in them and patiently tries to understand and assist them. How humiliating to have a hurry-up call to a case of eclampsia resulting from a toxemia that may have been in the system for days or even weeks. Past experience teaches that most cases are seen for the first time just in this way. How humiliating to have one's case of obstetrics go to another physician for an examination and have him find the urine loaded with pus and other evidences of a pyelitic. How humiliating to have a case of obstetrics drift away to another physician who finds a bad case of nephritis that had so seriously affected vision that it was necessary to empty the uterus.

When a physician has been engaged to attend a labor he should know his patient, detect any pathological condition that may arise in pregnancy labor and the puerperium and use his best efforts to correct them. Women should be taught and encouraged to choose their physician early in pregnancy and report to him from time to time as he may direct. Many do not do this for want of knowledge.

The nervous manifestations known as the neurasthenic and the psychasthenic states, the neuroses and the psycho-neuroses characterized by an increased irritability of the nervous system, physical and mental weakness are of

common occurrence in the child-bearing period throwing a cloud over the happiness of the home and causing the mother much anxiety and distress. Most women are free from nervousness for the first few years of married life but after the birth of two or three children, and probably an abortion, an asthenic condition is apt to appear. The patient grows weak and tired in body and mind and dreads her home duties—especially is this the case with the woman who showed a neurotic tendency before marriage and probably broke down in her school work, thereby showing a natural instability of the nervous system. This condition gradually grows worse as other children come into the home and finally culminates in a nervous breakdown with a long chain of nervous and visceral symptoms with no discoverable physical lesions to account for them. Their gloomy spirit, their morbid fears and anxieties, the constant study of their feelings which they wrongly interpret, make them miserable indeed. From slight irritations they are thrown into weak, fainting, smothering attacks, which feel to the patient and appear to the family like impending death. The patient has remissions and exacerbations but is always more or less sick. She has a lump in the stomach with gas belching and pain, a throbbing in the upper abdomen, pain over the heart, pain in the back of the head radiating down the spine, soreness, tenderness and gurgling in the bowels, pain in the region of the ovaries, falling of the womb, etc. The many pseudo symptoms complained of are not usually of the nature of those pointing to disease with a physical cause, but it must be kept in mind that a real diseased condition may be in the background. These patients generally forsake the family physician, soon consult the many cults and go from one physician to another seeking relief. Under the most favorable circumstances they are hard to treat and many physicians dread them. The pre-disposing cause of their sickness is generally found to be an inherited instability of the nervous system. Our endocrine friends would say that the glands of internal secretion were at fault. They may be right. The exciting cause is evidently the strain and stress of life as formulated by society.

Dr. W. W. Wells, Oklahoma City: Mr Chairman, this has been a very interesting subject the doctor has brought forward, and one that I have not heard in some time. We do know that with the majority of cases, after we have made an examination, we feel that the patient is perfectly confident she can go through with her pregnancy all right; that she is not going to have any trouble. There is no mental impression that has been allowed for there. Now, the Doctor speaks of this

behavior of the patient towards this delivery and towards her pregnancy. If we do not allow this patient to get these mental impressions, it is not at all likely that she will be the nervous wreck that we see as the result of a great many deliveries. I think that a great many of the nurses that we employ will say, "I don't care for obstetrics; I don't want to nurse obsteteics; I don't like babies", and that kind of a nurse should never be allowed to nurse an obstetrical case. They get the wrong impression; they give the patient the wrong impression. The patient that has gone through repeated deliveries and has not these symptoms of neuroses and psycho-neuroses, we feel she has been properly taken care of.

Now, as the Doctor has well said, every one in making an examination of the patient sometimes will find lacerations and displacements, and many times just a simple repair of second degree lacerations of the perineum will cure the patient of her back-aches, head-aches, and different aches about the body, when they are probably only mental impressions that were put there by some person unconsciously at the time of the delivery.

The Doctor spoke about the husband of this expectant mother. I don't think we give them the instruction we should. There are a great many of us who just stick to the mother, and intend to give her the instruction to give to him, and he knows nothing about it. Just as the Doctor says, we ought to give him a good talking to in the office, if we can get him to come to the office; if not, as soon as we arrive at the case.

I was surprised to hear that two out of every five labors have had perineal lacerations—

Dr. Hatchett: With the primipara only.

Dr. Wells: That is quite a percentage. If I am not mistaken, I have read that there are no third degree lacerations except they be by operative procedure, such as instrumental deliveries and so on; no third degrees. Second degrees occur before that. Now, if we have gone over our case, as the Doctor has stated and taken a good historical examination and a good physical examination of the case, we know exactly what we are up against when we go to deliver the case. We know what we might expect. She is extremely nervous, afraid, and when these impressions prey on the mind a long time I think it is a good idea to try to alleviate as much of that pain, as much of the fear and dread of delivery as we can through the use of scopolamin or or through ether,—I don't believe we use quite as much chloroform as we did, but something to allay this pain.

I don't want to speak about the psychology

of the man. Doctor brought him in in his paper. I think some of those fellows are rather radical when they came to the office and want to employ you. They seem to think they are going to employ a harvest hand to take care of the work instead of giving you the just consideration they should. If a man comes to you and feels that he wants to run the case himself, it is a good idea to turn it over to him and let him run it. Obstetrics have to be elevated to a higher level. I believe if we take a bigger interest in our cases and impress these people with the importance of these things which we know are important, because we can tell almost every case of eclampsia before we get to it. I don't believe there is one case in. I will put it, fifty, if you have done a urinary analysis and blood pressure, and run up P.S.B. and those other conditions, I don't believe there is one case in fifty that will get by us, and we can warn the people.

Dr. Leila E. Andrews, Oklahoma City:

Dr. Hatchett's paper is certainly an excellent contribution to this section. This work shows, first, a thorough preparation; second, it shows a wealth of experience, and, third, it shows a personality in Dr. Hatchett that unquestionably marks him as an ideal obstetrician.

There are three great epochs in the life of woman; puberty, pregnancy and menopause. Of these three perhaps pregnancy is the greatest, in fact we acknowledge it is. When we consider that and we realize the wonderful influence that society today has on pregnancy, we can in a measure understand some of these things Dr. Hatchett has spoke to us about—the psychology.

I think that the thorough physical examination of the pregnant woman will perhaps help us more than the thorough physical examination of a woman in any other condition as she presents herself for examination. Perhaps a goiter may linger before her pregnancy has taken place and upset in her endocrines, but her pregnancy, with its accompanying amenorrhea and the physiological action of the various glands, why, there is no reason why we can't expect a deviation from normal and yet there be no radical disease of these various structures.

I certainly was delighted with Dr. Hatchett's paper.

Dr. W. A. Fowler, Oklahoma City: Many of these psycho-neuroses are dependent upon a sub-normal nervous system which we cannot remove except indirectly. That should be—the threshold of the nervous expression, as it is called, should be raised as far as possible by psychic appeal. I don't believe we are justified in telling a woman she is going to be perfectly well, and she is not going to have any trouble.

It is going to bring us into disrepute, because some of them are not going to get along perfectly well. I think we ought to keep before her the heartfelt suggestions and in our instructions we give to mothers, we start out with quotations, "one of the most wonderful things in life," or about strong and healthy mothers. I think we should tell her all our care is precautionary; that nearly all the troubles that women have are preventable, and it is our function to prevent all that is preventable. I think by keeping that attitude, that we should not permit ourselves to assure her she is not going to have any trouble whatever, because some of these women are going to have trouble, and we know it.

The second thing is we ought to recognize that in nearly every case there is a physical basis for a neuroses. There is a sub-normal nervous system plus a physical basis, and we ought to look very carefully for the physical basis of this abnormal nervous expression. It may be a mild chronic, low grade tuberculosis. You know tuberculosis in its late stages is characterized by extreme optimism of the patient. It is not at all probable in other cases. Take our early T.B. cases, they are despondent, low blood pressure, tiring easily and the other symptoms. Of course those are not the symptoms in late tuberculosis, but in these early low grade, chronic, infectious conditions we find those generally the symptoms, and if we are unable to place our fingers upon them eventually, the fact that the patient tires easily and that her blood pressure is decidedly below normal ought to indicate to us that picture, and we should then endeavor to make our patient take the right treatment, namely, rest. If we have this blood pressure running below 100, we ought to tell her to take ten hours rest in bed at night, and lie down and rest three hours in the day; not to do much hard work, and as Dr. Hatchett states, we can sometimes get these patients to go away from home, go to their mother, and the mother babies them, feeds them up and lets them rest, which is good for them. I think we ought to study this aspect, so that the physical basis, is possible, will be removed, so that we will escape getting into these neuroses.

Dr. R. S. McCabe, Oklahoma City: The Doctor has brought up some very good ideas there in the study of psychology. One phase of that condition, I think, is sometimes traceable to the doctor who has delivered a woman previously. It has been often my experience to hear a woman say that Doctor so and so told me that I should never get pregnant again; that I would die if I was ever pregnant again. I believe that is a wrong impression to leave with a patient. The doctor himself is to blame for that condition.

Another thing is the overwork that we put on a woman during pregnancy. It is the farmer's custom when an animal becomes pregnant to favor that animal and not to throw undue work upon it and strain it. It is the custom in the human family when the woman becomes pregnant they begin to anticipate the future and prepare for it, and hence, on top of all their work they have to do in connection with their household work, they have the sewing and preparations for the new arrival. I believe this is one thing that brings about more of the nervous strain upon our patients.

Dr. J. G. Smith, Bartlesville: One of the things I want to mention is this. Doctor Hatchett has given us an excellent paper. I just attended a clinic at the Los Angeles County Hospital, and the endocrines that the Doctor speaks of is one of internal secretions. Some of the biggest men we have are feeling as though they were just on the verge of learning a great deal of internal secretions.

Now another, and one I believe of the greatest impressions that I had, was the family history. Now, Doctor mentioned the school girl. When we have patient after patient and patient after patient, and these men will make it a point to get the history of the patient as a child, as a school girl and as a young woman, not only her physical condition, but the home life and so on; in other words a complete history of the case, when they have that and have the data, then they begin to teach the patient and know how to handle them.

Dr. J. B. Clark, Coalgate: I think Dr. Hatchett's paper was a real good paper, and I enjoyed very much hearing it. There are a few questions I would like to ask pertaining to cases of that kind, as I was called in a case not long since in consultation. The lady was about twenty-two years of age, a primipara, five months in a family way. I made the examination and found that she had a tubercular kidney, and also a right lower lobe tubercular from an examination, after making an X-ray examination and also a microscopical examination, showing that the examination was correct. Now, the question with me is whether it is our duty to go to the patient and tell her the exact condition, as we are aware in those cases the best treatment is the treatment, the only treatment, or would it be advisable to have that kidney removed to take the work off the other kidney. The doctor, with whom I was in consultation, and I talked it over, and finally went to the bedside of the patient and talked it over with her; told her what I thought; gave her the exact history. On Monday morning—this has just been a few days since—the doctor came to me and said, "Well, Dr. Clark,

you have run our patient off. How came you to do that?" I just want to know whether it would be best to keep your mouth closed, advise them along the line, or to come right out with the truth about it.

Dr. E. L. Yeakel, Shawnee: It seems to me a great deal of the psychology of pregnancy is starting soon after the woman becomes pregnant. The first thing that usually happens is that the neighbors begin to tell her of the hard time they had, of the hard times friends they have known have had, and this information we give her that she is going to be all right, our talk is standing just about alone. It seems to me we have to start early in working on the psychology of the pregnant woman.

Dr. Hatchett: I am very thankful to the members for what you have said in regard to my paper. It was gotten up hurriedly.

Now, about the neuroses having a physical basis. Dr. Fowler spoke of them all having physical basis. There is a question about that.

Dr. Fowler: Beg your pardon. I think you misunderstood me. I don't think I said all of them had; a great many of them had. I didn't mean to say it if I did.

Dr. Hatchett: I think it is the consensus of opinion of the profession that many of the neuroses do not have a physical basis. How much the action of the endocrines affect the distinctive qualities or traits of an individual is not known. It is true that not a few of these patients are asthenic with poor peripheral circulation, low blood pressure and the victims of a bad hygienic home environment.

The capricious character of the many subjective symptoms of the neuroses and their failure to take a consistent place in the symptomatology of any known disease, and above all the happy results that often follow their judicious treatment stamp them as being psychic in character. This is the conclusion reached by all who have given these patients serious consideration and close observation for long periods. The physician may not be slow in the detection of a neurotic element but many balk at their treatment.

The old aphorism, "As a man thinketh in his heart so is he," is richly exemplified in the lives of these distressed people. They entertain thoughts of fear, timidity, anxiety, worry and gloomy forebodings regarding their physical condition and even cherish them. These morbid thoughts, the prime cause of their distress, must be eradicated from the mind and replaced by thoughts of self-control, courage, confidence, poise, duty to others, hope, health and happiness.

Thought forces in all ages of the world have shaped man's destiny for weal or woe. They are forces that medicine must reckon with in a

specific way in the treatment of psychic diseases.

Christian Science took a rusty link from the great chain of medicine and notwithstanding its lamentable want of scientific knowledge it has shown in some instances the power of thought over psychic disease. By virtue of the physician's scientific medical knowledge and his familiarity with diseased conditions, he makes an intelligent selection of patients amenable to psychic treatment. To him psycho-therapy will ever be a remedy of increasing interest and value.

Now, of all your troubles, take plenty of time. Don't make fun of them. When I first began practicing medicine they used to make fun of me. We used to give them an ice water enema; we used to give them a great big dose of morphine, and we did a great many foolish things. We didn't regard the seriousness. They are sick; Oh, how sick they are. Did you read the other day what William Mayo said about psycho-neuroses and the trouble they cause? They cause so much trouble, that is real trouble; real trouble.

I am sorry the reporter is taking what I have to say, it is so disconnected. You take these people and take plenty of time. There is glory enough in the achievement to take plenty of time. Now, of all your troubles, which one of them bothers you the most? Now study. She will put down the preventive symptoms the first thing. If you were not bothered with that symptom, what is the next one? Now, if you were not bothered with A and B, then what is your third symptom? Then you put them down, record them in your history. Don't forget that; don't forget it. If you didn't have A, B and C, then what is the fourth thing that bothers you the most? She will tell you. Let her tell it; Oh, let her tell it. Now, if A, B, C and D didn't bother you, then what would be your fifth? And you will have from twelve to fifteen symptoms in many of these psycho-neuroses. Tell her you will be back in two or three days. When you go back she don't remember this list of symptoms she has given you, and the next time she comes back, "Well, Mrs. Jones, how do you feel in" so and so. "I am all right that way." "How do you feel?" B; mention that subject. "I am not troubled that way any more." And you will find out that you are nearly ready to wipe the slate; wipe the slate of the pseudo-symptoms. What does that teach you? That teaches you that all the symptoms, twelve or fifteen you recorded, were pseudo-symptoms, symptoms for that time.

Now, in regard to the case mentioned by

Dr. Clark; he has a bad case. Of course we must hold our cases to ourselves. We must try to draw them and hold them, and there is only one way you are able to do that, and that is to keep in close contact with them. We don't want our cases straying into the hands of other people, and if we have been negligent it works to our detriment. It ruins our profession. The doctor has a case that in all probability we would consider the advisability of taking the uterus at once if the case justified it. We wouldn't consider removing that tubercular kidney, but I should think we would consider it; we should take it under advisement. It is a great thing to be tactful and to approach a sick person just right. You got her alarmed and she went off to what she thought was some celebrated doctor.

Dr. Clark: She went to Sherman.

Dr. Hatchett: To her family physician. That is common, and I expect you felt relieved of a burden.

Dr. Clark: Yes, we did.

Dr. Hatchett: I thank you.

A RARE COMPLICATION OF MEASLES. BULLOUS ERUPTION.*

J. RAYMOND BURDICK, M. D.
Tulsa, Oklahoma

I wish to state at the beginning of my report of these two cases, that I have searched the American literature to the best of my ability for other reports on this rare complication of Measles, but up to this time, I have found only one. This report was by an American writer and he has since told me that no other case of this complication of measles has been observed in this country as far so he could find. He also stated very few cases have been reported in foreign literature.

Report of Cases.

Case One:—

At the time I saw these two cases we were having an epidemic of measles. In this family were four children, the oldest a boy of ten years had measles three years before, a girl six years of age had just recovered from an attack of measles with no complications that I could discover. The other two were twin baby girls ten months old. The one I was called to see, the mother told me, was born about two hours before her twin sister, the labor was normal and both father and mother were in good health.

Five days before my first visit this baby developed measles with no unusual symptoms noticed by the mother or nurse until the morning of the fifth day, when they were much

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alarmed at what they thought was urticaria.

The family physician was called, and later he told me he thought it must be due to syphilis. On examination I found the Measle rash still showing plainly, but it had a dark bluish color over the parts of the skin not involved up to this time with the bullous Eruption.

When I entered the room the mother and nurse were watching a Bulla that was just developing and was then about the size of a walnut. This was increasing in size very rapidly and filled with fluid resembling the vesicle of a severe burn; in less than an hour the Bulla was the size of a goose egg with four other starting. I then punctured the large one which was much distended with fluid. The fluid at first was perfectly clear but later became cloudy. Microscopical examination showed many pus cells and some organisms in the smears, which I had not seen before. I left some of the Bulla contents at the Laboratory and requested some cultures be made, but unfortunately this was not done. The temperature on my first visit was 105 degrees and the measles rash, as I mentioned before, was plainly seen between the bullae which were fast increasing in number and size; marked congestion of the eyes, Kopliks, spots and a cough were noticed. The child seemed delirious at times and suffered a great deal.

At the end of the second day pieces of skin, two and three inches in size, commenced to roll up and peel off from the chest, back, face, abdomen and legs. The arms were the least involved, but in applying the dressings we had to be very careful as the entire epidermis would detach and come off, where there was a bulla, until very little skin remained on the body. It was interesting to notice there was no involvement beyond the junction of the skin and mucous membrane. The eye-lids, lips, nose and labia, were very much swollen with loss of all the epidermis over and around them. The blood examination on the second day showed white cells 24,000. The temperature remained around 105 until death, which took place suddenly in collapse on the ninth day Case 2.

The twin sister, as near as I could determine, developed measles on the second day after her sister became ill. On the fourth day of the measles this child developed Bullae on the eye-lids, lips, ears, neck and chest. The eruption spread to other parts rapidly but not so extensive as in the first case. The temperature in this case was also very high, but returned to normal about the fifteenth day. In treating the first case I painted the skin with paraffin and numerous other applications with no beneficial results until I applied liquid

tar, to which I added, a dram each of oil of eucalyptus and tincture of echinacea to the quart, which seemed to give relief to the first baby. I commenced using the liquid tar in this case as soon as the first Bulla appeared and continued the dressing for several days. There were more bullae in the second case than in the first, but they were smaller. The epidermis after the bullae ruptured rolled up and came off but in smaller patches, leaving the balance of the skin resembling the ordinary case of Weasle rash; with the exception, as I mentioned before, a bluish color. The eruption did not at any time resemble urticaria, erysipelas or small-pox. The only condition that I have ever seen that in any way resembled the bullae, was that of a severe burn. The mother was nursing both babies up to the time the measles developed. At the time the second baby became ill the mother's milk was becoming low. I found a neighbor with a baby six months old that had more milk than she needed for her child and induced her to give us milk sufficient to feed the second case until it recovered; whether the change of milk had anything to do with her recovery, of course, I could not say. It was very hard to feed the first case on account of the swollen condition of the lips, what nourishment it did take was by feeding the baby with a medicine dropper.

Reports in Foreign Literature.

Dr. Steiner in 1874 reports four children in one family having Measles followed by bullous eruption. He had seen 6000 cases of measles and these four cases were the only ones of this kind he had ever seen. The fact that they occurred in one house-hold, in the same epidemic of measles, indicated the contagious nature of the eruption. Three of these children recovered. The eruption of the vesicles appeared in the first child on the first day after the measles, eruption in the second child two days after same, in the third child on the second day, in the fourth child a half day before the measles eruption. The fatal case died in collapse. Hensch, in 1882 saw a girl aged four years who on the third day of the measles eruption developed Bullae, from hazel-nut to dollar size, over the entire body. This case had practically all the characteristics of my cases. Hensch states that the measles presented a darkened appearance corresponding to what is generally called the hemorrhagic form, but after the eruption of bullae the skin presented the appearance of a high grade burn.

The child died on the seventh day in collapse. Hensch cites the only case he could find in literature up to that time was reported by Carrol in Dublin in 1868.

Baginsky in 1900 reported a case of a girl

aged thirteen months with bullous eruption and later gangrenous ulceration of the skin following measles. A diplococcus was obtained in pure culture from the blood and organs. The child died in collapse nine days after the appearance of the eruption.

Discussion.

Dr. W. M. Taylor, Oklahoma City: The cases reported are very interesting. Dr. Burdick has certainly given a very clear picture of those patients.

Now, take the picture that he described there of that child, and if it was not associated with measles you would immediately say that was a case of pompholyx. Dr. Langston will recall we have a child in the hospital now with a typical case. It came in with the body almost entirely covered with those big bulla. They look, as you describe them, just exactly like a blister or burn, and a clear serum underneath the epidermis. It is not only in spots about the places where it has developed, but it extended over the entire body, and just looks like you could peel the entire outer layer entirely off almost now.

Now, I don't know the etiology of that. We took the case, and this case was due to streptococcus infection. But occurring with these cases of measles that you reported, they occurring in the same family, and with no other case of pompholyx or impetigo, it looks pretty suspicious for the second case to develop as an exposure to the first, but occurring in measles I have never seen a case. I don't know that I have anything to offer in the way of discussion. Those cases were all very seriously ill, and you lost one of your cases?

Dr. Burdick: Yes.

Dr. J. A. Hatchett, El Reno: This is a very interesting paper. I have noticed a few times in life that pompholyx would come up in connection with other diseases, even come up by itself, and it will come up in such a way as to always leave me wondering what it was and why it came, etc., but I don't think I ever saw a case of pompholyx come up and complicate measles. I would like to ask the Doctor if he has consulted all the authorities on epidermis, and whether they have mentioned that complication. It seems to be exceedingly rare.

Dr. J. B. Clark, Coalgate: Mr. Chairman and gentlemen, as a rule those bulla are only in the epidermis, generally between the layers of the hardened portion of the epidermis and the mucus or malpighian portion which just covers the corium and the measles breaking out is from the corium or capillary portion and I can't understand that in this condition, it seems to me that he could have had an

effusion passing through which would cause the bullous eruption, which would be of a clear color, or he could have formed the capillary condition from the measles which passed through the mucus also, which would be of a dark color, which would indicate from blood. As was mentioned, we always have the pemphigua bulla, which also comes and would be from—it is really of a copper color, and a differential diagnosis would have been proper to have made a Wassermann. We also have, as he spoke of urticaria and erysipelas conditions which also cause those conditions, and we also have, which likely was not the case here, herpes. We also have acute dermatitis which causes those conditions with the results.

Now, my idea in the case would have been to have made a differential diagnosis, excluding each one, and then find out whether this was really a pemphigus from syphilis or pamphigal eruption or whether it would be from extravasation of the blood or a serum. Of course, if he had made his different tests why then I think we could have got down to the real true differential diagnosis.

The paper was real interesting, and I certainly appreciated it.

Dr. Burdick: The only reason we didn't go into this more thoroughly at that time was because of the distressed condition of that child. It was almost impossible to do anything for it. It was delirious, very high temperature, and it was almost impossible to handle it. We couldn't characterize it by any examination, and it seemed to be in such trouble, pain and distress we couldn't do much for it. We simply did the best we could in trying to relieve its immediate suffering. You could stand by and watch these bulla when they came, in about an hour they would be that big (indicating). When this child died there wasn't any skin left on the body at all, and the temperature remained very high.

The only case I could find, and I haven't found any mention of it, I have searched the reports for the last six or eight months, and I haven't found any mention of it in any text books, and the only report I could find in this country was by Dr. Knapp, a friend of mine in Kansas City, who had a case, only this case was later, but it had absolutely the same characteristics as this. In the case he had, he had the advantage of having two of the best skin specialists in Kansas City, who positively declared it was not pompholyx.

Dr. W. M. Taylor, Oklahoma City: What was the age in Dr. Knapp's case?

Dr. Burdick: I think it was seven or eight years. They also excluded syphilis; went through all the tests, and they were up against it in their diagnosis.

Dr. Taylor: Doctor, have you had a blood test on the parents?

Dr. Burdick: No, we have not. The father and mother were healthy and well so far as I know. I was glad to get through with it. There was no resemblance to erysipelas in this case of mine, and Dr. Knapp said that epidermitis and erysipelas were not in his case and I haven't been able to find any other case except Dr. Knapp's, and I have talked to him half a dozen times since this case. It is certainly a very deep seated contagious condition occurring in one family, the second child coming in a few days following the other one, and it was amusing, or just simply interesting to watch one of these bulla, watching for a few minutes it was very large and very distended with fluid, and the fluid was first clear, later on beginning to take on a cloudy color. Just the minute one of those things would rupture, and it would rupture spontaneously or by coming in contact with the dressing and we would rupture it, that skin would all come off, every bit of it come off. There was not a bit of skin left on this child; not a bit. The only thing, I think, that saved the second child was the fact there was more skin, and the skin didn't come off in such large patches as it did on the first child, and that first child was the most distressed.

Dr. Carl Puckett, Pryor: Did it take the strain off to puncture the bulla?

Dr. Burdick: No, just to let out that fluid didn't seem to relieve the child any at all. Another thing I did, and I didn't mention this, in puncturing two or three of those large bulla, that bulla content was positively hot. To touch some of it on my finger it was positively hot.

Dr. Puckett: What was the temperature running at that time?

Dr. Burdick: Running about around 105 when the case started, from that until the collapse. It was impossible to get any urine because we couldn't catheterize the child, because every time we would touch the child anywhere the skin would come off. It was awfully hard to handle the dressing at all. We tried everything in the way of applications, and there was a great deal of difficulty in trying to feed the child. The lips were swollen, the eye lids were swollen, and it was hard to get the child to take any food at all. It just seemed to be in agony and distress all the time.

Dr. A. L. Solomon, Oklahoma City: I would like to know the last day of the disease in which you noticed the kopliks spots?

Dr. Burdick: The only time I noticed the koplik spots was the first time I examined the child.

Dr. Solomon: How long had it been there before the measles rash itself had developed?

Dr. Burdick: Had been about four or five days; still showing. After that we were not able to examine it at all.

THE TOXEMIA OF PREGNANCY.*

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The toxemia of pregnancy may be defined as a state of disordered metabolism due, essentially, to pregnancy. It is expressed clinically most often by minor ailments, such as headache, vertigo, slight nausea and vomiting, despondency, etc., but occasionally by grave and even fatal affections, such as pernicious vomiting of pregnancy, eclampsia, and acute yellow atrophy of the liver. In its graver manifestations it is a frequent cause of fetal death, while, as a cause of maternal death, it ranks second only to sepsis. Its milder, as well as its graver, manifestations undoubtedly often result in impairment of function of vital organs and thus make a substantial contribution to the sum of obstetric morbidity.

Etiology and Pathogeny.

The liver is the great chemist of the body. Besides its functions to manufacture bile, urea, and glycogen, it is the great detoxicating organ of the body. What the liver cannot render non-toxic the kidneys attempt to eliminate. In the toxemia of early pregnancy the primary break-down seems to be in liver function. The exact cause of this is unknown and has been the subject of much speculation and investigation. That the usual metabolic processes on account of an organism so small as the ovum in the first trimester of pregnancy would be sufficient to cause hepatic break-down would seem unlikely. Edgar (1) believes, in connection with the rapid evolution of the various organs and tissues of the body from a relatively undifferentiated matrix in early fetal life, "that this rapid differentiation is accomplished by enzyme-like bodies, which are generated, do their work, and give way to others;" and that the responsibility for this organo-genesis rests upon the liver. In later fetal development, the metabolic strain upon the liver is relieved considerably by the actively functioning liver of the fetus and, probably, by the less complex changes in development. On the other hand the demand upon the kidneys in the usual case is greater in later pregnancy on account of the increased amount of waste products to be eliminated from the body of the

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growing fetus. This may account for the difference in the clinical picture between the toxemia of early and that of late pregnancy. The deleterious effects of constipation and of the ingestion of excessive quantities of food, especially the proteins, has long been recognized. The importance of infectious processes, such as those about the teeth or tonsils, appendicitis, pyelitis, cholecystitis, etc., in increasing the detoxicating and eliminating burdens to the point of hepatic and kidney insufficiency has not been given the recognition it deserves. It is my opinion that focal infections bear a very close relationship to the etiology of the toxemia of pregnancy. I have observed this point for the last several years and can say that I have not found a case of persistent toxemia which would not respond to the usual methods of treatment except those cases associated with demonstrable focal infection.

Whatever the principal and contributing etiologic factors may be, the fact of a break down in liver sufficiency in cases of true toxemia of early pregnancy is, I think, pretty certainly established.

What are the results of failing hepatic sufficiency? Diminished bile-forming function results in impairment of saponification and emulsifying of fats, the fats thus unchanged by enveloping the tiny food particles interfering with the action of the digestive fluids upon the proteins, thus favoring their more free putrefaction in the intestinal tract. (2) Diminished urea-forming function is accompanied by the presence in the blood of the chief antecedents of urea, ammonia and carbamic acid. (3) Impaired glycogenic function results in imperfect glycogen katabolism with the formation of lactic acid, which bears an important relation to fatty degeneration. Since complete combustion of fats requires the simultaneous katabolism of carbohydrates, there is also defective fat combustion with the formation of acetone bodies and the fatty acids. (3) Diminished detoxicating function results in the presence in the blood of an increased amount of toxins, as from the gastrointestinal tract, pus foci, etc. From these facts it will be seen that in hepatic insufficiency the tendency is toward: first, acidosis and; second, degenerative changes which may effect any organ or tissue of the body. The acidosis results in the abstraction of alkalis from the cells, lymph, and blood. We may realize the vital processes affected by this diminished alkalescence when we remember that the function of respiration is dependent upon the alkalescence of the blood; that the solution of globulin in protoplasm is maintained by association with chemical bases; and that the action of ferments— digestive,

circulating, and intracellular—are determined by the reaction of their media. (3) The following table represents graphically the results that follow hepatic insufficiency resulting from the action of the, as yet, undetermined essential factor in the etiology of the toxemia of pregnancy:

Function of Liver. Results of Impairment.

1. Bile-forming —saponification and emulsifying of fats, with

Discussion.

Dr. Wann Langston, Oklahoma City: When asked to discuss this paper, I did not know that I would be called upon to lead the discussion, since I am not an obstetrician. This subject is of great interest to me because of my connection with a Hospital in which we see a number of these obstetrical tragedies each year, and because of my interest in functional diagnosis.

The doctor has mentioned a function of the liver, but little discussed heretofore, one of great interest from a physiological standpoint, and which promises much from a diagnostic standpoint. This is the protein fixing function or as the French call it, the Function Proteopexique. Widal and others have demonstrated the following points:

1. Proteins such as proteoses when injected into the general circulation cause what they term a hemoclastic crisis, manifested by lowering of the leucocyte count, the blood pressure and the coagulation time.
2. Amino acids do not produce this effect, except in very large doses.
3. Blood withdrawn from the portal vein after a protein meal and injected into the general circulation produces the same result.
4. The same result is obtained if the blood from the digestive tract be prevented from passing thru the liver, by connecting the portal vein to the inferior vena cava.

They conclude, therefore, that proteins are not absorbed from the intestine as amino acids alone, but some as incompletely digested proteins, and that these are removed from the circulation by the liver; that if the liver is removed as a barrier to these, either by artificial means or by pathology of this organ, the fact is demonstrated by this hemoclastic crisis. If this be true we have a simple means of detecting derangement of liver function.

The test is simple and is carried out as follows: A leucocyte count, blood pressure and coagulation time are taken in the morning before the patient has eaten. 200 cc. of milk is then given, and the tests repeated in 20 minutes and every 20 minutes for an hour and a half. In the normal individual there is a prompt rise in the leucocyte count, the blood

pressure and the coagulation time, each giving a curve with the convexity up; in the liver deficiencies the reverse is true, giving a curve with the convexity down.

This test has been done on more than one hundred patients in our clinic. In every case with a demonstrable liver condition the test has been positive; in no case in which we could rule out liver pathology with a reasonable degree of certainty has the test been positive.

The test has been performed on a number of cases of normal pregnancy with negative results; it has been carried out in three cases of toxemia, one early, two eclampsias, and markedly positive in all. Two of the cases recovered, and as the symptoms improved the test grew less positive, but persistent after symptoms had disappeared. One case came to autopsy and the liver pathology was marked.

With reference to toxemia of pregnancy this test is of interest from two standpoints:

1. If the premises upon which it is based be correct, the test demonstrates that there is marked derangement of liver function in both early and late toxemia.

2. The hemoclastic crisis is probably the earliest demonstrable symptom of these toxemias and, therefore, may be the means of making an early diagnosis and the institution of important prophylactic measures.

The Doctor brings out the point that the clinical picture in late toxemia is that of kidney pathology. The chemistry of the blood is interesting in these cases. There is but slight nitrogen retention, the uric acid retention being proportionately higher than the other non-protein nitrogen bodies. The nitrogen partition of the blood is probably the most delicate index of renal efficiency, and this indicates but a mild involvement of the kidneys, not at all in keeping with the profoundness of the symptoms.

Although there is evident pathology of the liver and kidneys in eclampsia, we should not lose sight of the possible endocrinal cause of this condition. Massaglia has carried out a series of convincing experiments which show the resemblance in many respects between the hypo-parathyroid testany in pregnant dogs, and eclampsia, and it is his opinion that the parathyroids have a neutralizing effect on the normal metabolites as well as the additional ones thrown into the maternal circulation during pregnancy, and that when the parathyroid secretion is deficient, there comes a time when the toxins accumulate faster they can be cared for and the symptom complex called eclampsia results. If this be true, and I believe it merits careful consideration, the proper administration of parathy-

roidin would seem a logical treatment, especially as a prophylactic in threatened eclampsia.

Dr. Geo. R. Osborn, Tulsa: This has been a very interesting paper to me, and a scientific one. I couldn't add anything to it. I might just remark, like the Doctor said about my paper this morning, make one complaint or criticism; that is, with the statement that he would never use the vaginal caesarean section in the case of eclampsia. I know there is a great deal of contention now between those of the Strongnoff treatment and of the more radical followers, but my experience has been all the cases that are actually without convulsions that I got good results using and doing Caesarean section; however, I would not do a vaginal Caesarean section after the eighth month of pregnancy or possibly after seven and a half months. Up to that time I think that the vaginal Caesarean section offers the best method, because there is less shock and and it is quicker done. Adding to the shock of the operation the shock from the toxic condition, of course, is not to be considered, but the lowering of the blood pressure, cessation of the convulsions following the operation, would suggest that it would be a good thing to do. We know if we have a high blood pressure that the bleeding, as the doctor says, is the proper thing above 175, and in those cases of high blood pressure I couldn't see any objection to using the Caesarean section.

As to the treatment for vomiting in pregnancy I think the chief thing is to limit the metabolism, as he says, and the use of the colonic flush accomplishes a great deal. As the Doctor has stated, the minor symptoms of toxemia deserve a great deal more attention than they usually get, and I heartily agree with him that all focal infections should be looked after even to the extent of extracting teeth or removing tonsils. I think that an operation on the mouth or throat is not dangerous to the pregnant woman, while any operation in the region of the pelvis, I believe, is. I have had a number of cases of teeth extraction and no trouble from it at all.

I have been very much pleased with the two papers, the laboratory work particularly.

Dr. Geo. W. West, Eufaula: I was very much interested in the Doctor's paper, and it brings to my mind very vividly something of the present knowledge on the subject compared with the knowledge we possessed when I went to school about forty years ago, more or less. We realize that the toxemia has resulted with pregnancy, but we don't know just what that element is. We did formerly believe it was the kidney all together, Doctor. What began to worry me some years ago was the fact that I found a kidney functioning normally, with

toxemia, and those things worried us some years ago, and I had an old teacher, Doctor Moses, I remember him very well, very learned old gentleman, and he got me thoroughly impressed with the idea of elimination; that when you couldn't do anything else, bleed them, and I have had some good results from it.

I remember one evening about thirty years ago I was riding along through the woods, and I came upon a little camp in the woods there. I had been coming from clear over across the river a horse back, and was going through the woods on a short cut. An old lady ran out and hailed me. She had gone over to this little tent a few minutes before and found this woman lying out in front of the tent in a comatose condition. I just had my little old fashioned pill pack with me our grandfathers used to use. I didn't have anything along with me to bleed her with except a pretty good pocket knife I was in the habit of keeping fairly sharp. I took that knife and jammed it down in a little bottle of carbolic acid I had there, took my pocket knife and a lead pencil and got this old woman to hold it for me and I bled that woman severely. I didn't have anything else to do. I gave her a hypodermic of morphine, got her straightened up as well as possible, and went on down about three miles and got some more paraphernalia and went back, but I never got an opportunity to do much more for the woman. She came to and gave birth to this baby that night with an uneventful recovery, and I have no recollection of ever seeing her either from a financial standpoint or otherwise.

Now, I think a great deal of the Doctor's paper, but I feel like I would have stressed elimination just a little bit more. I want to stress that; I want to stress elimination and assimilation, but the key-note of the treatment of these cases, gentlemen, is prevention as much as possible, and the key to that is not only dependant upon the kidney but upon the liver as well. I know from past experience that you find patients with normal functioning kidneys that are going to wake up with toxemia. You can't depend on that all together.

Dr. Leila E. Andrews, Oklahoma City: I enjoyed Dr. Fowler's paper very much indeed. I want to tell you that personally I feel we are just on the threshold of a better understanding, it seems to me, of some of the conditions that arise during pregnancy. Those who have been doing a great deal of work along this line for many years, Ventleer, Ketch and some of those, their conclusions are that the pregnancy that occurs with its physiological amenorrhea, toxemia and the various other manifestations may be produced by some

changes in the endocrines. In fact they conclude that there is that change, and if we only understood more about it we would probably be able to solve some of problems.

The parathyroids Doctor Langston mentioned, and the added activity of the thyroid the changes in the parathyroid gland shown at the end of the labor, by the contractions of the uterus, all those symptoms that are being given attention show that we are dealing in pregnancy with more and more and a greater appreciation of endocrins than we had heretofore given them credit for. We don't know; that has not been entirely worked out, but there seems to be some intimate connection between those various glands and what they do at that time.

As to eclampsia, I feel personally interested. I still feel it is an awful tragedy, and that emptying the uterus if it is a very serious condition to my mind is worthy of more than half the consideration. I feel that way.

In regard to the dosage of morphine, I feel that a larger dose of morphine, usually not less than a quarter or a half preferably, and then that gives time to produce all of this elimination that the doctor over there spoke about. I enjoyed the paper very much. I think that these cases, and there are thousands of them dying all the time, many that don't have very much treatment either getting well, many of them dying without much, and die with the best we can do. These are questions I think that the individual case, after all, is to have its individual interpretation.

Dr. W. W. Wells, Oklahoma City: The Doctor has brought to us a most wonderful paper dealing with probably the second greatest subject in obstetrics, sepsis being the exception, and he has not only done that, but he has gone on here and tried to show it up in a way that we can't deny it. He has taken up the physiology of the digestive tract and liver, and shows that when the other functions are impaired then the saponification and emulsification is impaired, which would be the natural causes and then following that the protein plus protein which would be there would not be digested, would not be destroyed, and then on on top of that we would have intestinal putrefaction, and the end results would be degeneration. That would be the tendency he gives there.

Now, toxemia, with the toxemia focal, we get our focal infections produced there. The toxemia would involve the intestinal tract similar to the other condition that would be infected, and then the degeneration. Those two tend to degeneration. When we have impaired glycogen minus katabolism we have

the lactic acid, and lactic acid and fatty acid, that is our acidosis, and then he goes on to the ultimate end.

Now, that is getting at it as near as we can. If we believe the physiology we have to believe the statement that he puts on the board, because that tends to show that.

Now the case that is cared for, coming to us early, we are able to recognize these conditions, at least these end results from our tests, the prophylactic and the high blood pressure tests and urine analysis. I don't believe there is a case—I made it 50 per cent. a while ago, but I don't believe there is a case that is followed closely, as the Doctor has outlined, over two weeks in the latter part of pregnancy that does not show before we have a conclusive toxemia that we call eclampsia, I don't believe there is a case that does not show some change in the blood pressure and in the urine analysis.

I remember in particular a case that comes to my mind, a woman with her blood pressure around about 132, over 70, no albumen, with no headaches or vertigo, and in a week's time the blood pressure showed about 136, and in a week's further time 140 with a trace of albumen, then 150 and 158 the following week, and we got a trace of albumen. We were able to follow that case closely, and we were able to tell that before, there was some trouble brewing; that she was getting toxemia from something. I was able to get the outline of the fetus, could hear the heart, and make an outline of the position of the L.O.A. So, we felt the baby was all right, but we couldn't account for this toxemia. The week following the blood pressure of 158 I gave her some treatment and her blood pressure came down to 150. The day after I made the last blood pressure test and made the last urinary analysis they called up in the evening and said she was having pains, and sent her into the hospital. I made an examination and verified the same condition as to the finding of the baby. I wasn't satisfied, and I made a vaginal examination, something I don't do in more than one out of 10 cases, made a vaginal examination and found a large bag of water which immediately ruptured. The head was presenting, but above that I found another sack not ruptured. I took the patient to the operating room, and she immediately delivered a live seven months baby, and while we went to put that baby over on the table she delivered a macerated dead fetus of about six months of age. Now, that woman was already prepared. She knew that there was some trouble somewhere, and that she might have convulsions.

Dr. R. S. McCabe, Oklahoma City: I don't

know when I have heard a paper delivered with more address than this one of Dr. Fowler's. I think he has brought toxemia in pregnancy to us more in a textbook form and more digested than any paper I have heard discussed for some time. To me toxemia of pregnancy, I believe that a great deal of it is traceable to the teeth as the focal infection, especially the crowns that people are wearing today. It has been my observation that so many of those crowns will show disintegrated food and exudate underneath them and irritated gums, I am heartily in favor of removing not only the crown but the dead root.

Dr. W. A. Fowler, Oklahoma City: I wish to thank all of you who have discussed the paper so freely. I want to say in regard to Dr. Langston's suggestion as to the parathyroid insufficiency being the cause, I think his position is correct, I think it is worthy of consideration, but I think that consideration should be borne by investigators and research workers. It is not really a problem that the clinician should consider important yet. Personally I do not consider that the clinical entity of testany hypo-parathyroidism is identical with eclampsia. I think that is a very interesting question, though, and one that is worthy of consideration.

Dr. Osborn mentioned the Caesarean section. Of course I am perfectly familiar with the fact that a great many men of very good standing do Caesarean section, but the profession is not united on that at all, though the tendency is very decidedly toward conservatism. Most—I won't say most doctors, I don't know just the proportion, but many men who were previously very strong advocates of Caesarean section are the very strongest advocates of conservatism. I know of no man who has given conservative treatment a trial who has gone back to the Caesarean section treatment. It seems to me that in the termination of pregnancy we should select the method that offers the least shock to the patient. I do not intend to convey the impression that no case should have Caesarean section, but the point I made was that the Caesarean section was not indicated in eclampsia unless there was some other reasons for it. I think beyond any doubt it offers more shock than a normal delivery. I think most all will have to say that these patients have more shock than they normally do. Then why operate?

Formerly they said that the cause of eclampsia was pregnancy; therefore, remove the cause by terminating pregnancy. Now, of course something in connection with pregnancy does cause eclampsia, but it is not the sole cause. Something like 20 per cent of cases occur after delivery. We have the worst cases occurring

post partum. So, while we terminate the pregnancy, we do not terminate the pathology which causes eclampsia, and for the time being we increase the pathology, and while increasing it we may kill the patient.

Extraction of teeth was mentioned by several people. I don't think we should make the mistake of extracting teeth because the woman is toxemic. I think we should certainly have X-rays made of the teeth before they are extracted.

Dr. West talked about more elimination. Now, if Dr. West noticed, I recommended 4 ounces of castor oil and 6 or 7 gallons of water as a colonic irrigation every six hours. That will give, I think, good elimination. But what the Doctor meant was to emphasize that, and don't delay your elimination. If you do your patient will be much more apt to die than in you introduce prompt elimination.

I want to say in regard to endocrines, that is an interesting thing, but we must not get up in the clouds about the treatment of eclampsia. There is a lot of theory about that. We know eclampsia is pregnancy plus something—we don't know what. But we do know this pathology: degeneration of the liver, diminished urea forming function, degenerating cells in different parts of the liver. What are you going to do? Take the burden off of that liver and give the patient time to clear up, and clinically that shows the best results. That is the usual thing. It is not really necessary we should know just what the nature of the toxin is. I don't believe it is pregnancy alone. I have enough faith in the Divine plan of things to believe that if it is a normal, healthy patient, that toxemia would not exist. But, I think we ought to look for this plus in pregnancy. Plus what? Plus too much eating, plus constipation, plus insufficient elimination. Those things we know we ought to eliminate, and I believe it will give us better results.

PROCEEDINGS OF UNIVERSITY HOSPITAL CLINICAL SOCIETY

December 2, 1921

Dr. A. A. Will: *Case of Adeno-Carcinoma of the Rectum and Pelvic Colon.*

White, male, age 37 years, entered University Hospital August 3, 1921, Sept 19, 1921, and Nov 11, 1921. The history at his first entrance to the University Hospital was that he had been operated for complete obstruction of the bowel, at McAlester in June 1921. A malignancy involving the lower portion of the pelvic colon and upper portion of the rectum was reported found. A left rectus colostomy had been done.

The patient was sent to the University Hospital for radium treatment. No radium being available he was given series of deep X-ray therapy at each admission. On the third entrance into the Hospital he was in excellent shape for the second step of Bevan's three step operation for eradication of carcinoma of the lower bowel, namely, the removal of the malignant growth.

He was operated on November 23d under ether anesthesia. Median incision was made with the electric cautery and a complete resection of the distal end of the pelvic colon was done. The upper portion of the rectum which was involved by the malignancy was dissected free from the surrounding tissues and excised, the remaining rectum being placed back in rectal pouch. Microscopic diagnosis on the tumor was adeno-carcinoma. At a very early date we expect to do our third step which we hope will be a complete removal by the rectal route, when we will again present the case.

I consider this one of the greatest advances in surgery of the lower bowel that has been put forward in recent years. Not only for non-operable growths of the large bowel but in all malignancies of the large intestine. I am sure that this three step operation has lowered my mortality and I believe it will for all surgeons doing this work.

Dr. W. W. Wells: *The Value of X-ray in Obstetrics With Demonstration of Version.*

The X-ray has become an indispensable adjunct in the diagnosis of pregnancy, to both the obstetrician and the gynecologist.

No gynecologist should operate upon any large tumor of the abdomen, in which a pregnancy might be suspected, without a radiograph, and no obstetrician should allow a case in which he suspects multiple pregnancy, or malpresentation of the foetus, or malformation of the pelvis, to go to term without a radiograph.

In the early part of 1915 I had a large number of cases X-rayed. At that time I was very much interested in pelvimetry and thought if we were successful in getting good pictures of the pelvis of a pregnant woman, we might be able to diagnose any malformation, such as exstosis of the bones, forming the pelvic inlet, or be able to make a fair estimate of the internal diameters of the pelvis. But the roentgenologist was only able at that time to get a fair picture of the pelvis with some outline of the foetus in a thin woman, and in the woman with thick abdominal walls, the picture was a blank. Therefore, the X-ray was discarded, because the foetus could be outlined and a fair estimate of the pelvis made by bimanual manipulation in the thin woman, but in the woman with thick abdominal walls

the diagnosis was not always satisfactory.

There has been a great improvement in the radiograph due to the Bucky Diaphragm. We are now able to get a picture in which we can determine single or multiple pregnancy,— the presentation, and in some cases the position of the foetus.

Two questions naturally arise: First, is there any danger from the X-ray to mother or child? Second, how early can pregnancy be determined by the X-ray? In answer to the first, roentgenologists tell us that exposure to the X-ray for the length of time required to take a picture is not long enough to cause any deleterious effect on the child, neither is it long enough to burn the skin of the mother. The second is still a debatable question, but most roentgenologists are sure of a picture at five months.

The pictures I am going to show you tonight will demonstrate very plainly the improvement in radiography, also the absolute necessity of the radiograph in external version. De Lee tells us that no case of breech presentation should be allowed to go to term without an attempt at version. Shears says in regard to version the procedure if carefully performed is harmless and for that reason is always worthy of trial.

The X-ray picture that I wish to show this evening will demonstrate plainly the improvement in the X-ray technique as the first pictures are very faint, while the last ones are very plain.

The first picture is that of Mrs. S. This is a lateral view. As you see, it shows twins presenting breech. Now of what value was this to us? First, it confirmed the diagnosis of twins. Second, when this case was delivering, the child on the left began to engage first. We were able to keep the breach of the child to the right from engaging by making pressure on the buttocks until the first child was delivered, then we forced the breach of the second child down into the inlet and they were delivered breech and are living. Mother and babies are doing well.

The second case, Mrs. R. This as you see, is a transverse. The occiput is in the left iliac fossae. This patient had a very stormy pregnancy, coming to the hospital because of pain in both sides of the pelvis, caused by irregular pressure of the child. The second picture, taken two days after the first, shows the vertex presentation. This change was made by external version without an anesthetic, thus changing a difficult labor to an easy one. The case delivered L.O.A. eleven days later. Mother and child doing well.

The third case, Mrs. H. as you see, this picture shows a breech presenting R.S.A.

The second picture of this case shows vertex presentation. External version was performed under light chloroform and anesthesia, as it was impossible to do it without an anesthetic. This case delivered three days later, vertex. Medium low forcep — living child — normal puerperium.

The fourth case, Mrs. S., breech R.S.A. This case had a stormy pregnancy. She came complaining of pressure pain under liver and gall bladder, where you see the head. She also had pain in the left iliac fossae where you see the breech. This is a multipara. She said she had never felt pain like this before during any of her pregnancies. The second picture of this case shows what can be accomplished by external version, without anesthesia. Here you see a vertex presentation, which delivered ten days later. Living child. Mother in good condition.

Fifth Case. Mrs. F. This picture, as you see, shows breech presentation. This case was to be here this evening, but as yet has not entered the hospital. If she comes in we will do an external version for you.

Sixth case. Mrs. D. This is another breech. This case is in the hospital. I will attempt to do an external version, without anesthesia. Here she comes.—Now this case is close to eight months. You who wish to examine her come forward and do so before I turn the child.

Now the first maneuver is to get the breech out of the pelvis. I can put my fist down between the pubic arch and the promontory of the sacrum. Now flex the head and buttocks, and with pressure on the occiput to the left and downward, and counter-pressure on the buttocks upward and to the right, we are able to get this child in a transverse position. It has now passed the transverse and you can palpate the head below. We now have a vertex presentation. We will have an X-ray made to verify our work.

Supplement.

Mrs. F., the case that the X-ray showed the breech presentation, came to the hospital the next day after the Clinical meeting. Bag of waters had ruptured. We took her to the operating room. Dr. Brummitt gave her ether anesthesia. I performed the external version, she was sent to the X-ray room and we had a picture made. It shows the head in the pelvis. L.O.A. position. She delivered six hours later. Child in good condition.

The other case, Mrs. D. the one that I performed version on before the society, we had radiographed. The picture shows vertex presentation. This case has not yet delivered.

PROCEEDINGS OF OKLAHOMA CITY
CLINIC, ROUND TABLE, WESLEY
HOSPITAL

Dr. A. L. Blesh: *Goitre, Hyperplastic Toxic (Exophthalmic) Illustrating the Graduated Operation.*

Mrs. F. Came to Clinic one month ago, suffering to the superlative degree, the entire symptom-syndrome usually associated with Graves disease. She is now in the second crisis of the disease, having had an intermission in which she had so far recovered that she thought she was almost, if not quite well. This crisis began about six months ago, with all the symptoms, tachycardia, weakness, rapid emaciation, muscular tremors, sweats, ocular manifestations, all present to a marked degree. The weight loss is great, the weakness so profound that she is obliged to spend much of her time in bed. Heart is dilated and there is a distinct murmur, regurgitant in type.

Hyaline and granular casts are present in urine. Briefly we have here a case, that were it possible for us to wish this goitre out, the patient could not survive the sudden endocrine upset, to say nothing of her ability to with-stand the major procedure of surgically removing it.

Sending her to the hospital she was put to bed, her blood chemistry worked out, which when done, showed a retention which fully corroborated the clinical judgment of a very narrow threshold of safety.

After a few days rest in bed the right superior pole was ligated under a local anesthetic. So sensitive was this patient, so susceptible to psychic shock, that this was done under the pretence of giving her an injection treatment. Reaction from this mild operative procedure was marked. Her pulse racing to 160, acidosis vomiting for 24 hours was marked. Within a week a marked amelioration of all symptoms occurred and she was sent home to bed where she continued her improvement. In three weeks she returned, much improved, for the second ligation, which was done frankly, under local. Reaction again quite severe, pulse going to 148 and marked acidosis vomiting, both symptoms subsiding in 24 hours.

We will again send her home after a week in hospital. Nothing more will now be done until, carrying the lessened load of toxemia, she shall have gained in weight and well-being. When that occurs, as it almost surely will in from two to six months, we will do the thyroidectomy, and there will not be as much reaction and scarcely as much risk to life as occurred in either of the ligations.

Mrs. B., a patient who has been in bed for nine weeks in a hospital in an adjoining City.

During all this period of rest she continued to lose in weight and strength and when seen by me, presented the typical picture of toxic (exophthalmic) goitre. She was put to bed in Wesley Hospital, the blood chemistry showing as in preceding case. She had been ill for six months, and this is her first crisis. There are no secondary lesions of heart or kidneys. Frankly under local, the right pole was ligated a week ago. Reaction severe, pulse to 160, acidosis vomiting for 24 hours, after which improvement in every respect is marked. Pulse slowed from 140 to 100, nervousness disappearing, sleeping well, appetite improving. Sent to her home to return for further work on judgment of her physician.

Remarks These two cases illustrate the acme of surgical risk and our present method evolved from several years careful study and experimentation, of gradual surgical approach. They constitute what was justly regarded a decade ago as scarcely justifiable surgery. Most of them died with or without operation. The intermissions were often regarded as medical cures. They also offered pabulum upon which various injection cures fed.

As has often been pointed out, these cases are always trembling on the verge of acidosis, especially during a crisis. Over-activation of every mental and bodily function is the source of the acidosis since it is true that every thought, every emotion, every muscular action, every function of body or mind consumes alkali, and produces acid. These patients are in every way superlatively over-activated, due to the increased thyroid output. So long as the liver, which is the great alkalizer of the body can neutralize this excess acid and convert it into harmless chemical compounds which the kidneys and other eliminating organs can dispose of without irritation, no organic lesions of heart or kidneys occur as a rule. Then the blood chemistry only will give us a true hint of the real state of affairs. The C. O. 2 test is also of marked clinical value.

These cases in our clinic are handled by team work of the staff with the laboratory. Because of the short duration of the second case, together with the fact that no organic lesions of heart or kidneys are present, and the only moderate reaction from the ligation and the marked improvement it will probably be possible to do the major operation upon her return.

Dr. J. Z. Mraz: *A Case of Gonorrheal Seminal Vesiculitis with Several Unusual Features.*

Case No. 7666. Age 37. Had gonorrheal urethritis 13 years ago. Duration of discharge 5 months. The following year had a chancroid complicated with a bubo in left

groin. No further trouble until three years ago when he began having sudden sharp and burning pains in terminal inch of penis. These pains last but a second or two and may recur a dozen or more times in an hour. They have persisted throughout the three years, never missing a day, in spite of repeated courses of treatment by competent men consisting of passage of sounds, irrigations, prostatic massage and vaccines. Because of history of penile lesion several Wassermann tests have been made and all are negative as is also the spinal fluid.

Has had four attacks of epididymitis one year and a half ago, one six months ago, and one four weeks ago and the last ten days which still persists. Each one of these followed either physical exertion or an unusually vigorous prostatic massage. They were all right sided except the last, which is bilateral.

About three weeks ago had two attacks of what appeared to be a right renal colic following immediately upon an unusually severe attack of penile pain.

X-ray of urinary tract negative for stone. Rectal examination shows a boggy prostate and palpable vesicles quite sensitive to touch.

Smear of prostatic secretion contains pus and frequent gram negative diplococci.

On August 26, a bilateral vasotomy was done and 20 C.C of 15% argyrol injected into each vas.

The epididymitis still persisting, a bilateral epididymotomy was performed a week later at which time both vasa were again injected.

After the first vas injection, the penile pains ceased completely for the first time in three years and there was no recurrence of these pains for two weeks. Then they began to recur but were much weaker and less frequent.

Since the last vas injection the patient has been getting semi-weekly massages on a full bladder and while the penile pains still occur, they are growing less frequent and less severe.

The question of cure by the present treatment is still in doubt. Seminal vesiculectomy is the only other alternative, but should not be resorted to, in the writer's opinion, until every other treatment has been tried.

This case is of interest for the following reasons:—1. Length of time (13 Yrs.) that a gonorrheal infection lingered in the seminal vesicles with an interval of 10 years during which time there were no symptoms whatever. 2. At no time since the primary gonorrhea has there been any urethral discharge. 3. An attack of renal colic which was probably due to pressure upon the lower end of the ureter by a swollen seminal vesicle with a consequent temporary urinary obstruction.

Dr. W. H. Baily: *Case of Starvation Acidosis.*

Mrs. X.—, case of Dr. E. C. Ernheart was a poorly nourished adult, white woman, waitress by occupation. Usual diseases of childhood. Never had typhoid, scarlet fever nor any surgical operation. Family history negative.

Present history—Has been losing weight for over two months. Was always a very light eater and in her present position eats very irregularly. Never drinks coffee, not much of candy or pastry eater, mostly fruits. About two weeks ago became suddenly nauseated while eating. Vomited at that time. Had some slight pain at xyphoid cartilage, not acute at any time. Had slight fever, vomited immediately whenever she took food, even a drink of water.

She continued work, however, for about two weeks but grew continually weaker and finally had to give up and go to bed.

Physical examination:—No definite pathological condition was discovered by general examination. Patient was restless and more or less prostration present. There was a peculiar heavy fruity odor to the breath. The respiratory rate was increased and there were accompanying symptoms of "air-hunger". The eyes were deeply sunken and very heavy dark circles under them. The skin was dry and parched.

Clinical picture was that of a very severe degree of acidosis. The carbondioxide combining power of the blood plasma was 36, volum %, by the Van Slyke method. The urine was highly acid with trace of albumen and indican. No sugar, an occasional hyaline cast. The leucyte count was normal. On account of the history of the food returning almost immediately on being taken, cardiospasm was thought of as a cause of the starvation. Fluoroscopic examination while drinking a glass of barium in buttermilk showed the food passing into the stomach which fairly definitely ruled out this factor as a cause.

The patient was put on appropriate treatment and began to improve from the first. There was no more vomiting after the first few hours and she made a rapid and complete recovery.

On account of her long hours of work as a waitress and her habit of insufficient food taken at irregular times she probably slowly developed the condition of acidosis which when the vomiting suddenly began was farther aggravated by the loss of fluids and the inability to take any food at all.

The various laboratory methods used for the diagnosis of acidosis include the following:

1. Carbon Dioxide combining power of blood plasma.

2. Hydrogenion concentration of the blood.
3. Carbon dioxide tension of alveolar air.
4. Acidity of the urine.
5. Ammonia excretion in the urine.
6. Bicarbonate or alkaline tolerance of the patient.

Of these tests the carbon dioxide combining power for the blood plasma has proven the most satisfactory in our hands and is the one on which we have come to place the most confidence.

308 Patterson Building.

LEUKEMIA IN A CHILD

W. W. RUCKS, M. D.

M. R. Case No. . . . Male child, age six years.

A child of healthy parentage, having had no serious illness at any time, vigorous in play and enjoying life after the manner of a healthy child.

Present illness began two weeks ago with difficulty in breathing and a cough. The dyspnoea has increased in severity until at this time it is quite marked and the child is cyanotic at times, especially if he is removed from the cool air. Three days before admission it is stated by the doctor, that he discovered a large spleen and the abdomen became distended, with large dilated veins coursing over it. Child has been unable to sleep except when held in a semi sitting position and in the fresh cool air.

There is no history of a febrile attack but the mother says that he has not been well for three months but the symptom, (dyspnoea) which alarmed them did not begin until two weeks ago.

Physical examination shows a child laboring for breath, cyanotic, distressed anxious expression. Pupils dilated, react sluggishly to light. Face pallid and puffed about eyes. Cervical axillary and inguinal adenopathy. Heart negative. Coarse rales both anteriorly and posteriorly over the chest. Abdomen distended with large splenic mass filling out the whole left side and coursing over abdomen are dilated veins as large as a pencil.

A diagnosis of Myelogenous Leukemia was made, and confirmed by a white blood count of 800,000.

The outstanding features of this case are the suddenness of onset and the great dyspnoea. Leukemia in children is essentially an acute disease. The duration rarely over a year, and sometimes it may terminate fatally in a few days. The onset in this case is given by the parents as being abrupt, but in that they are referring to the dyspnoea. The mother has observed that the child has not been well for the past three months.

The dyspnoea cannot be classed as obstruc-

tive. The lymph glands are not sufficiently large to produce pressure to the point of causing dyspnoea. If it is not obstructive, it must be caused by nervous disturbance. That leukemia affects the nervous system is abundantly borne out by a review of the literature. In some cases the very first symptom is a convulsion, meningeal irritation is sometimes manifest. Munio recently reported a case in the J. A. M. A. under the heading "Acute Myelogenous Leukemia Simulating Meningitis." Pathological findings show hemorrhagic spots scattered throughout the cerebrum, with diffused leukemia infiltration.

Tapie and Casser classify the nervous lesions under the following heads:

1. Medullary degeneration—Small foci of sclerosis or capillary hemorrhages in the brain and cord.
2. Leukemia Infiltration—this may or may not cause symptoms.
3. Hemorrhages in nerve centers.
4. Nerve lesions due to compression.
5. Zoster.

It is my opinion that the dyspnoea in this case is due to some one of these nervous disturbances.

308 Patterson Bldg.

PROCEEDINGS OF ST. ANTHONY'S HOSPITAL CLINICAL SOCIETY

November 21, 1921.

Dr. L. M. Westfall: *Case Report of an Eye Injury.*

Mr. J. E., age 30; family and previous personal history negative. Sixteen years ago patient was shot in right eye with bird shot. As result of this injury the eye has since been blind. Recovery, with the exception of the blindness, was prompt and uneventful, according to the patient.

Patient was admitted to St. Anthony's Hospital on August 2nd, 1921, complaining of great pain in the right eye and over the brow, extending over the right side of the head. Lachrymation excessive.

Examination showed the right eye-lids normal; conjunctiva of the lids and bulb slightly injected; right bulb smaller than left; cornea clear; pupil contracted does not respond to light. Through the pupil is seen the grayish white lens. Eye is tender on palpation and tension is below normal. Small dimple is seen in the sclera on the temple side, well back of ciliary region, at point of shot entrance. Left eye: only slightly injected but lachrymation profuse on exposure to light; no tenderness on pressure and tension normal; ophthalmoscope shows no changes in fundus; vision

20% 40. Radiograph shows twelve shot scattered over the skull and one appears to be in the right orbit, well back.

Enucleation of the injured eye was advised on account of sympathetic irritation in the good eye and impending sympathetic ophthalmia. Right eye was removed under ether anaesthesia. Adhesions found to be rather dense, which was probably the cause of a slight hematoma immediately following removal of the eye. There was no pain following operation and left eye rapidly cleared to normal vision, with cessation of photophobia and lachrymation. Upon opening the removed eye, the lens was found to be very hard and opaque with a yellowish discoloration. A gritting of the knife was at first thought to be due to the knife encountering a shot lodged in the eye, but proved, on examination, to be an osseous-like substance lodged in the posterior portion of the eyeball.

Healing of a perforated eye with or without inflammation depends upon several different factors; namely, location and type of perforating body and whether foreign body is retained, and whether or not the perforating body carries an infection; also upon the nature of the wound depends the fairly perfect or altogether imperfect closure. This is important in so far as later events are concerned. The fact that this perforated eye healed readily and gave no further trouble for sixteen years indicates that the shot carried in no infection and that the closure was good. It is well known that the interior of the eye is an especially good culture media for germ growth.

This eye, then, was destroyed not by an immediate violent process, such as a panophthalmitis, but by a process of protracted inflammation, with shrinkage of the organized exudate, with consequent retinal detachment and atrophy of the eye ball.

Dr. W. J. Jolly: *Heteronymous or Bitemporal Hemipia.*

Edward A., age 34; family history negative; mother and father both living; father age 56, mother age 53. Patient is married and has seven children living and in good health. His wife has had two miscarriages, one seven years ago and the other two months ago.

The patient has had the diseases of childhood, including measles, mumps and whooping cough. He had specific urethritis when fifteen years old; denies ever having syphilis, and the Wasserman test is negative. He has had periodical headaches since twelve years of age, occurring about once a month. He has had a post-nasal discharge for the past ten years.

Present illness commenced three years ago, with a very severe headache. He had a fainting spell, lasting about ten minutes; the head-

ache continued. He called in an eye, ear, nose and throat specialist in Sherman, Texas, who advised and removed his middle turbinate, he said to drain the sinuses. He was partially relieved for about three months, then his headaches gradually grew worse again.

In 1920 he first noticed his eyes gave him trouble when reading. He could only read a few minutes at a time. He also commenced to have diplopia. The pain soon commenced in his eyes and has continued since that time, especially in the left.

Pressure on the eyes elicits soreness and pain. At present vision in the right eye is 20% 200; with his left eye he can count figures only. Ophthalmoscopic examination shows paleness of the optic disc. His sight is gradually failing. Urinalysis shows a specific gravity of 1.018, reaction acid, no albumin, no sugar. His pupils react to light. I am unable to satisfy myself of getting Wernike's reaction.

Dr. A. D. Young was kind enough to make a neurological examination. I will ask the Doctor to state his findings.

Dr. A. D. Young: Cranial nerves normal; no paralysis or contracture; no tremors or tics; station and gait normal; knee jerks and abdominal reflexes normal; no Babinski; no ataxia; no anaesthesia. X-ray of skull negative.

(Dr. Jolly, continuing). In order to locate the lesion in this type of hemipia it is necessary to review the anatomy of the optic tracts. The origin of the outer half of each optic tract is the external geniculate body, the superior corpora quadrigemina, and optic thalamus. They pass to the optic groove and form the outer or temporal half of each retina and optic nerve. The internal half of each optic tract commences from each internal geniculate body and inferior corpora quadrigemina and passes to the optic groove, and passes over to the opposite side and forms the inner or nasal side of the retina and optic nerve of each eye.

A lesion of the optic tract posterior to the optic chiasm will produce lateral or homonymous hemipia, the most frequent type. If, for instance, the lesion is in the left tract, the function of the temporal half of the left retina and the nasal half of the right retina will be destroyed, hence, the patient will see objects to the left only. In heteronymous hemipia or bitemporal hemipia, the type this patient has, he sees objects to the left only with his right eye, and to the right only with his left eye, showing that the function of the inner or nasal half of each retina is destroyed; hence the lesion must be in the optic chiasm.

The cause of this type of hemipia is tuberculosis, syphilis, sphenoidal sinusitis, and benign tumors, most frequently of the hypo-

physis. In this case I believe we can rule out tuberculosis and syphilis. There is no doubt that he has suffered from sinusitis, but the rarity of this being a cause and the slow progress of this condition leads me to the opinion that it is a benign tumor of the hypophysis, although we have no symptoms of acromegalia.

Dr. Lea A. Riely: *Case of Diabetes Mellitus.*

A white woman, 52 years of age, consulted a surgeon on account of hemorrhoids. During the course of the examination it divulged that she had gradually been losing weight all summer. In April she began to have a severe diarrhea. Dietary management stopped that, but any return to ordinary food caused the diarrhea to return. There was no pruritis, polydipsia, or polyphagia, but she has a very nervous temperament, and suffers much with palpitation of the heart. She has hot flashes at night which disturb her sleep. Personal history is negative. Physical examination is negative, her ordinary weight being 130 pounds. Her genito-urinary history is that she has always urinated frequently and in large amounts; and nocturia, three or four times during the night. Rectal examination shows hemorrhoids. Menstrual history negative. Marital history: Husband is living, but in poor health. He is a lawyer of some distinction, who suffered a hemiplegic stroke three years ago. Since that time she (the patient) has had unusual duties thrust upon her, necessitating a great deal of nervous strain and anxiety. Her husband was put on a low protein and high carbohydrate diet, and she remained on this diet with him.

Family history: Father died of paralysis at the age of 77; mother died of pneumonia at the age of 83; one aunt died of tuberculosis; one paternal cousin and one paternal aunt died of diabetes.

Laboratory reports: Urine; Sp. Gr. 1036, albumin negative, glucose four plus, diacetic acid two plus, acetone two plus. Blood sugar 0.21%. Phenolsulphonethalein 22.6% the first hour and 9.85% the second hour. Blood; R.B.C. 6,000,000, Hgb. 90%, W. B. C. 8,500, Polymorphonuclears 64%, lymphocytes 34%, large mononuclears 1%, and transitionals 1%.

On entering the hospital she had been on a low fat and diminishing carbohydrate diet (entered 10-27-'21). After entrance she was given broth and black coffee on the 27th, 28th, and 29th. Below is given a diet table with corresponding urinary findings:

Date	Protein	Carbo- hydrate	Fat	Cal- ories	Glu- cose	Dia- cetic	Acce- tone
10-30-21	30	15	5	225	0	x x x	x x
10-31-21	40	20	10	330			
11-1-21	100	85	60	1280	0	x x x	x x x

11-2-21	60	40	15	535			
11-3-21	110	95	70	1450			
11-4-21	115	100	75	1535	0	0	0
11-5-21	115	100	85	1685			
11-9-21	130	115	90	1790			
11-10-21	Broth and Black Coffee				x x	0	0
11-11-21	100	80	70	1350	0	0	0
11-13-21	115	90	80	1540	0	0	0
11-18-21	Boiled Milk, Broth, egg and gelatin not over 1000				0	0	0
11-19-21	45	45	48	792	1 r- ace	0	0
11-20-21	24	30	24	452	0	0	0
11-22-21	110	85	50	1150	0	0	0

The figures in the "protein", "carbohydrate", and "fat" columns indicate grams of these, respectively.

The etiological aspect of this case would center first upon the diabetic ancestry. Nauyn places great emphasis on this, while Joslin places little. Modern glucose tolerance tests in diabetic families brings to light many latent diabetics which, otherwise, would have remained unknown. Second, a high carbohydrate diet, in an individual predisposed toward diabetes, broke down her carbohydrate tolerance. Third, the nervous temperament and the intense nervous strain under which the patient had labored for the last three years. Fourth, a diarrhea which lessened the bodily resistance. This is a medium case of diabetes, and from the above chart you will notice the exceedingly high fat content of the diet was forced upon us because of its less irritation to the intestinal tract which was quiet intolerant to our 5% carbohydrate vegetables. On the 18th, to check a marked diarrhea, she was placed on boiled milk, an egg, and gelatin the whole not to exceed 1,000 calories. The milk was probably the cause of the trace of sugar showing up the next morning. After raising her food to 1,790 calories between the 27th of October and the 9th of November she was down to a bargain-counter sale on the 9th. The excitement evidently lowered her tolerance, so that she showed two plus sugar the next morning. We often show the lowering effects of carbohydrate tolerance by the display of the emotion, as fear, grief, and anxiety.

The thing paramount in this case is the fact that we have continually been trying to educate this woman in the proper diabetic feeding; teaching her to weigh her own food and the different food values that she is allowed to take. She has been schooled in the examination of the urine, both for sugar and acetone, and has been a very apt pupil, so that on letting her go we feel that she will be able to protect any return of the trouble and manage it accordingly. A letter subsequently received states that she is still sugar-free, and her health and efficiency has not been impaired.

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EDITORIAL

THE UBIQUITOUS NURSING PROBLEM AGAIN—OUR POSITION AND CREED.

The JOURNAL acknowledges receipt of a letter from Miss Marjorie W. Morrison, Nurse, Oklahoma City, who, we shall state parenthetically for the information of our readers, has held many positions of honor in the Oklahoma Nursing profession for several years, and is a woman of the highest type, professionally and socially. The letter notes our November issue, and reproduction for our "Editorial Notes" column of a part of Dr. Chas. H. Mayo's recently widely heralded statement on a "Nurses Union", and also protests against the statement in the same issue suggesting a comparison of nurses and plumbers fees. Miss Morrison states that such a discussion never occurred at their State Association Meeting. She also enclosed an article from the "Pictorial Review" by Clara D.

Noyes, Head of the American Nursing Association, attempting to answer Dr. Mayo's criticisms, which appeared under the title "Sub-Nurses? Why Not Sub-Doctors?" On behalf of Division No. 1 of the Nurses Association Miss Morrison requests publication of all or as much as might be thought applicable.

In as much as anything affecting the nurse, whether economically, professionally, morally or in any other manner, is of very great concern to the doctor and all the people; we shall undertake to comply with Miss Morrison's request, as far as can be, though to do so demands unusual space for this section.

We shall attempt disposition of the second matter noted, first, by stating that the item stating that comparison of nurses and plumbers fees had been made at the Oklahoma City meeting, was, substantially, the gist of a press dispatch from a daily paper of that city, reproduced in its boiled-down state in good faith and in the belief that such comparison had been made. As a matter of fact, it very likely did occur as published, but probably was merely an "aside" suggestion made during the meeting, and, as is often the case, not noted necessarily by all attending. This idea seems reasonable and is born of the belief that no news reporter would mistake or misquote anyone in such manner. Certainly no one individual can possibly assume to know every detail of any meeting. It is not out of place to suggest also, while on the subject, as exception is taken to the statement, that no disparagement of the nursing profession was in mind in the repetition, and it seems to us, and we assure our nurse friends that the intent was to state a part of their contentions, that the comparison so made was an argument in their favor if anything. The comparison suggested "Is eight dollars per day for a trained nurse exorbitant when a plumber gets twelve dollars per day?" We assume to state the opinion of the bulk of our profession in expressing the opinion that the nurses wage scale now prevailing is more than justified in the comparison. However, we readily see that a high-class, competent, educated and refined nurse resents being placed in the category such comparison creates, and on that score they are assured that no informed physician, appreciating the great value and aid of the nurse, so places them. We hope this explanation is satisfactory to our nurse friends.

Reply to the Pictorial Review matter is fraught with possibilities especially as to misinterpretation of the reply. To forestall, as far as may be, that very possibility, we shall, on peril of tiring the reader, also appreciative of the fact that advance statement of the physicians "Creed" or principles in the matter

may not be pertinent to this article; attempt to have the nursing profession of Oklahoma advised of the attitude of the Medical profession to the Nursing profession. At the outset we insist on positively stating that we hold among our dearest friends, past and present, some of the highest characters it has been our great privilege to know, the nurse. We now recall that mere money has by no possibility compensated for the services they have rendered the writer and his family. Those so situated are welcomed to our home as prized, appreciated friends never to be forgotten.

The Pictorial Review article suggests many ideas. The very title seems to us an unfortunate selection, and, to the initiated, seems to instantly suggest the observation that there are in fact "Sub-Doctors". Our hospitals are full of them. The interne, in every instance, is, rarely allowed discretionary powers. In that respect he is situated much as the nurse is situated; he is required to carry out, not his own ideas of treatment of the case, but those given him by the physician in attendance. That fact alone answers the query. It also carries the suggestion that a nurse, whether the idea is accepted by all of them or not, *is* engaged, primarily, to execute, not her ideas, but those of the physician in charge. To that extent she differs from the physician, who is employed with the understanding, expressed or implied, that he is to use his discretion. The responsibility is solely his, failure of the plan of treatment adopted is chargeable, not to the nurse executing the plan, but, if to anyone, the physician directing the plan. This state of affairs also goes far to clarify the vexatious, much thought of difference in status of the nurse and physician. It is generally admitted that there is nothing so dangerous, as well as inexcusable, as the nurse who injects her ideas of treatment into any given case, especially when they run counter to the directions of the physician. That that actually does occur must be regretfully stated.

We agree with much of the indictment brought by the Pictorial writer. We believe that too much of the training period of the nurse has been, and is, sacrificed to financial greed on the part of doctor or hospital. This brings us once more to what we have previously stated; the belief that if the drudgery imposed upon the nurse was eliminated and their time given to actual study, the three years now imposed upon them as a prerequisite to graduation should, certainly in the case of the averagely intelligent young woman, be sharply reduced. It is our belief that some of our hospital authorities readily acquiesce in the

idea of a long training period for the obvious reason that during such period they profit by the services of the nurse in ratio all out of proportion to the excellent service they render. That is an injustice which some remedy should end.

The California Law, fixing the minimum wage for pupil nurses at twenty dollars monthly, eight hour day, forty-five dollars weekly wage for nurses and high-school education as entrance requirement, while thought "not commendable" by the writer, brings the suggestion that in that state "the worm has turned." So far as we are concerned, we approve of the "turn", but in part only. In actual practice, for instance, we should regret to be deprived of the *who have not had* equivalent to a high-school education. Certainly it would improve matters if all had such minimum qualification, and more than that, but we know that it is not absolutely necessary and this fact is due to the fundamental principal that the nurse, like the doctor, achieves success first and solely if endowed with good natural sense and has the rare gift of applying that sense to the given case. As to the wages and hours, any injection of them automatically takes the nursing work from their claimed plane of a profession to that of a trade. With the idea of "Unionism", pay scales, and fixed hours, the doctor can have no patience and on that there is no compromise. No professional man consents to restrict his work to "hours", nor does he, like the nurse, exact a like fee from all his cases for the same class of work. The unfortunate adoption by the nursing profession of wage scales and "hours" warrants the charge of the existence of a "Nursing Union" in principle, whether they admit it or not, the existing situation speaks more eloquently for the state of affairs than any statement of the nurse attempting explanation of the situation. A moment's reflection points out that many nurses, worth their weight in gold in a given case, *are underpaid* by the *maximum* wage, while on the other hand, and identical with our profession, many of them are positively detrimental to the case entrusted to them at any price. This does not prevent, however, the most incompetent nurse in Oklahoma from exacting and receiving equal remuneration with the most skilled and efficient. In that regard the nurses are exactly on the plane of the Union bricklayer, whose daily amount of work and reward is fixed; he may lay so many brick only, regardless of his proficiency, which might permit him to double the fixed limits, and for which no fair person would begrudge him remuneration commensurate with his production. Miss Noyes fixes the blame for part of the evils upon the greed of the doctor and,

mostly, the small, commercially conducted hospital, who, as above noted, exploit the pupil nurse just as long as it can be done. Miss Noyes also notes the fundamental objection occurring to one at once as to "Sub-nurses" or partially fitted nurses, principal of which is their inability to accurately observe, act in the absence of the physician in the face of grave emergency, or report intelligently to him progress of the case in the interim between visits. However, practical aspects, economical and other considerations seem to point to the adoption sooner or later to some such compromise if the poorer people, far removed from hospitals, are to have any sort of service. Observing physicians resent and rightly criticize the increasing tendency of employment of "special" nurses on cases where the nurses real work has long since become unnecessary and they degenerate into simply ladies "maids". This becomes more exasperating when other cases urgently demand nursing service. In this particular it seems fair to say that the nurse is not fulfilling her high function and duty. Another factor-speaking for the situation in Oklahoma at least, and and from actual experience—is the tendency of many,—far too many,—nurses, to select their cases. Illustrating one only, but which is typical of the matter, the writer recalls wherein one of the wealthiest, most cultured and refined families of the state, in which a confinement was pending and where the nurse engaged was ill at the last moment, found it next to impossible to secure a nurse for the case simply because it was necessary that the nurse leave the bright lights and the "movies" and go, to be sure into an elegant home, where food and surroundings were unquestionably superior to those to which most nurses are accustomed, but which unfortunately was located in a small village with only two trains a day. The excuse "I do not like to take out of town cases", sounded so inhuman, so unprofessional, so unlike the attitude of the better class of physicians in such emergencies, that the wonder, "Of what food has this, our Caesar been feasting" was one of the mildest thoughts. It is rightly admitted that this is not the attitude of the nurse of fine ethics and right principles, but it has occurred too often to be passed as a rare instance. If the calling of a nurse is the noble profession Florence Nightingale had in mind in her great struggles, it demands first and above all things self sacrificing devotion to duty. It certainly does not countenance this apparent hunt for flowery beds of ease only. The role of a "Good sport" demands that one play the game fairly, taking the bad with the good as a part of the days work.

Economical considerations inevitably govern

whatever concerns them. The mass of the people find it impossible to employ nurses even when urgently demanded, so, when we have the spectacle before us of one state regulating by law the work and reward of the nurse, fixing it at a prohibitive point, and we must assume arranged at the behest of the nurse who demanded an eight hour day, which means the critical case must employ three nurses and pay each of them forty-five dollars weekly, a sum of \$135.00 for the week, the denomination of "exorbitance" appears the mildest appellation deserved. That grim necessity will avoid that impossibility by creation and use of the best substitute goes without saying, and is certainly justifiable.

It is the writer's belief that no limit should be placed upon the attainments and heights of proficiency to which the aspiring nurse may attain, our profession should give that ambition every possible aid and encouragement, for there is a place and demand for the best service possible of creation, such a nurse is a positive jewel to both doctor and patient, often they are of vastly more service and more essential to the case than the doctor attending, she should have distinct recognition of her ability and have specific protection from the law to the extent that her transcendent abilities have no cheap, masquerading substitute sailing under her noble colors and her reward should not be on the low plane of the average, but all the case is able to give and in keeping with the responsibilities assumed, exactly as the physician demands and receives his reward.

However, if anyone, especially the Oklahoma nurse harbours the idea that the writer or the rank and file of the Oklahoma medical profession feels antagonistic to the nurse, feels anything except sympathy for her, her evolutionary struggles upward, and stands by ever ready to help her advance; this message hopes to positively assure them that the contrary is the actual state. The doctor does reserve the right though to make deserved, goointent, criticism of those eradicable or removable evils and bad practices existing in the nursing profession, when they do exist, and when such criticism may be helpful and constructive. The urgent criticism or warning from us to them today is that large numbers, possibly they will increase, of the people of Oklahoma are today so situated as to be unable by any means to have the services of the nurse, unable, regardless of the gravity and need. This situation is impossible and cannot, will not exist. We feel that offering a solution would certainly be resented and be ascribed by many of our nurse friends as presumptuous, with that before us, we cannot neglect the suggestion that a shortening of the time of

preparation is seriously demanded, that it is believed warranted and practicable by many physicians. They also believe that the "Special Nurse" tendency or evil should be discouraged, if possible by the nurse herself, who like many physicians when it is evident that services are now hardly needed, if at all, takes the initiative in terminating the matter. No physician likes to work for mere money alone, and if the nurse is a professional worker, she should hold to professional ideals to the extent of refusing to degenerate into a ladies maid, this certainly so when there is crying need for the nurse in other places of trouble and disaster.

MEDICAL DEFENSE AND INDEMNITY DEFENSE—EXPLANATION OF THE DIFFERENCE

Despite repeated explanations, by letter and verbally, it is evident that there remains total misconception of the privileges of the Medical Defense Fund, and the rights under indemnity policy held by our members. Appreciating that this is "Old Stuff" to most of our observing members, it still seems necessary for the information of many others to again state the difference: The Medical Defense fund is set aside from the dues of each member, it undertakes to defend him against alleged malpractice *provided*, however, the member sued was in good standing on the *date* of alleged malpractice and continues in that status from such date until final disposition of the case. This matter is administered for the Council by a committee selected by them for that purpose. The margin upon which defense is maintained is so small, the cost to each member so insignificant that the greatest economy must be practiced. In no sense is it insurance, it simply proposes to employ a lawyer for the doctor, if, after investigating, it is shown he is entitled to defense and it is decided to defend him. By no means is every man defended, the Council reserving the right to deny defense for many reasons, principal of which, however, is the inexcusable neglect of the member to intelligently co-operate in his own defense, failure to give prompt notice of every fact and incident surrounding the case, refraining from discussing the case with the public—Curb-stone trials—which always react unfavorably against the member, and in that case against every one of his fellow members. It also may be refused for other reasons not enumerated. In those cases where the member possesses protective indemnity insurance and such is deemed adequate by the committee to fully protect all his interests and rights, where it is evident that joint defense by the Medical Defense

Fund attorneys is merely duplication, avoidable and unnecessary waste, the Committee will deny defense as a matter of common sense, and so far, no reasonable member has been found objecting to that procedure. In the event, however, the member believes his rights imperilled, that his indemnity protection is not sufficient, written statement setting forth those facts clearly will be considered by the committee and if, in their opinion, he needs joint defense it will be given him. In this connection members should remember that it is always difficult for one to correctly estimate such a matter, common sense will show that he is not a good juror or a competent judge to pass on the merits of the matter. No disparagement is intended in saying that our profession, like all others, may be woefully biased in the individuals attempt to pass judgment on his affairs, that he cannot see the point, except from his own angle, is clear to the disinterested observer. If we could have him do any one thing about these cases, it would be to calmly sit down, do nothing, say nothing and keep it up until he was called upon to speak before court and jury.

Indemnity policies are entirely different matters, they are bought by the individual upon written application, and after approval he is required to pay just twenty-five times what he pays to the Medical Defense Fund each year. This policy guarantees to reimburse him against any loss he may incur, by reason of being sued and having the court decide that he has committed malpractice, the amount he has damaged the defendant plus costs of the suit levied against him.

We hope this unnecessarily long statement clears the issue in the minds of all our members.

MUSKOGEE SELECTED AS LOCATION FOR SOLDIER HOSPITAL.

After visiting and inspecting the several sites offered by different localities, listening to the claims advanced for each, the committee charged by the Senate and House of Representatives of Oklahoma and the American Legion finally awarded the prize to the City of Muskogee, which municipality offered a most attractive plot of land in what is known as Honor Heights Park. The location is a most commanding position, overlooking the country for miles in every direction, the Arkansas River and valley on the North and the City of Muskogee on the East, unfolding in a panoramic picture delightful to the eye of the observer. Certainly no more appropriate site could have been selected in the Eastern part of the State, taking into consideration the conveniences available to the institution.

Muskogee's water supply, one of its prized assets, is unlimited in quantity and irreproachable in purity. Muskogee is possessed of a high class of people socially, has fine schools, hotels, theatres, libraries, clubs, very good hospitals, a first class profession. It is located relatively near to the center of population who will be concerned in the hospital, has a splendid railway communication in every direction, and (what is more), a people holding very sympathetic feelings of interest in the "boys". That the staff of the institution will have the advantage of medical consultants able to render splendid service, goes without saying. Nearly every branch of medicine having representatives of fine abilities skilled in the specialties.

From many parts of the State, the JOURNAL has had generous assurances and congratulations extended to the Editor by reason of his home city's selection.

LEGAL RESTRAINT OF VENEREALLY INFECTED PERSON UPHOLD.

A decision of far reaching importance was handed down by the Criminal Court of Appeals, by which the Court held that Health authorities had the right to restrain by arrest etc. a venereally infected person. In this case a married woman, by her attorneys, sought release from the State Industrial School for Girls in Kay County by the writ of Habeas Corpus. The Court noting that the woman was married, had been incarcerated in the school for purpose of undergoing treatment, as provided by Chapter 17, Session Laws of Oklahoma, held that the County Court of Kay County and the judge thereof had proper authority to commit the woman, and following that idea remanded her to the custody of the school.

In another case, after it was shown by examination of the person restrained by the State Board of Health, and she was found to be free from venereal disease in a communicable stage, the court held that the cause for detention no longer existing, the petitioner should be released, and they so directed.

It is very good that this matter of the right to restrain a venereally infected person has been settled. That right on the part of health officers has always been questioned, and most naturally it has been followed by over cautious action, when only the most emphatic and drastic action was demanded. But no criticism should be lodged against the physician who not having been clearly advised of his rights and limitations to act, acted with all possible precaution, for those of us who have had to face suits on such account, know how forgetful the State is in the presence of attack upon its officers.

Editorial Notes—Personal and General

Dr. H. E. Huston, Cherokee, has moved to Aline.

Dr. J. Elmer Hughes has returned from attending the Mayo Clinics.

Drs. O. E. Templin and C. L. Rogers, Alva, have announced formation of a partnership.

Dr. J. W. Shelton, Ardmore, attended the Houston Texas meeting to hear Professor Fuchs' lectures.

Dr. and Mrs. T. R. Lutner, Lawton, attended the Hot Springs meeting of the Southern Medical Association.

Dr. Walter Hardy, Ardmore, was called to Portales, New Mexico late in December by the illness of his father.

Dr. Edwin C. Sharpe has located in Thomas, taking up the practice of Dr. P. G. Murray who has moved to Tulsa.

The **Pottawatomie County Medical Society** held its sixteenth annual meeting in the club rooms, January 5,

Bartlesville is preparing to open its new Memorial Hospital, erected at a cost of \$250,000.00 by Washington County.

Pawhuska is going through the process of decision on the details of their proposed hospital, which will soon be erected.

Pottawatomie County elected for 1922: President, Dr. W. M. Gallaher; Secretary-Treasurer, Dr. T. C. Sanders, Shawnee.

Dr. G. F. Woodring, Bartlesville, was the victim of aut mobile thieves, losing a new Buick on the night of January 8th.

Dr. J. T. Martin, Oklahoma City, delivered an address to the Enid Rotary Club December 8th. His subject was "Good Health".

Dr. F. L. Carson spent the greater part of the quail season in Seminole and Lincoln Counties and reports much success with his gun.

Dr. W. A. Fowler, Oklahoma City, sustained a fracture of the pelvis December 1st, which resulted by reason of an automobile accident.

Dr. T. E. Ashinhurst, Waurika, was reported seriously ill in December. He was able to successfully ward off the attack and soon recovered.

Five Women students are now enrolled in the school of medicine of the University, according to information by Dr. L. A. Turley, assistant dean.

Comanche Society elected: President, G. S. Barber, vice-pres., E. B. Mitchell; secretary-treasurer, J. W. Mason; censor, T. R. Lutner, Lawton.

Dr. William Stout, Cherokee, has moved to Waynoka, where he will make his future home. Dr. Stout has been in Cherokee for three years, connected with the Cherokee Clinic.

Dr. A. S. Nuckols, Ponca City, and **Mrs. Hazel Hyatt**, Arkansas City, were married in Oklahoma City, January 10th. They will make their home in Ponca City in the future.

Canadian County Society elected: President, Dr. H. C. Brown; vice-president, H. A. Dever; Secretary, Jas. T. Riley; censor, J. T. Phelps; Delegate, P. F. Herod, all of El Reno.

Dr. McLain Rogers, Clinton, President-elect of our Association was the guest of Oklahoma County Medical Society December 21st, where he read a paper before that body.

Garfield County Society elected officers for 1922 as follows: President, J. H. Hayes; vice-pres., P. A. Smythe and Glenn Francisco, who succeeds himself as secretary-treasurer, all of Enid.

Dr. R. L. Hall, Pawhuska, has joined the ever increasing army of the Order of Car Thief Victims. Dr. Hall lost his Dodge Roadster December 12, the thief brazenly driving it from the doctor's front door.

Dr. C. H. Weber, Bartlesville, has experienced the cold clutch of the "law" as a result of alleged charges of violating the game laws. Well, we can feel for him, for we too have had our little fling in the same matter.

Washington County elected: President, B. F. Staver; vice-pres., Wm. H. Kingman; Secretary, J. P. Torrey; Treasurer, Arthur North; Censors, 3 years, Ned D. Miller; Delegate, H. C. Weber, all of Bartlesville.

Grady County Officers for 1922 are— President, Dr. Martha Bledsoe; vice-pres., J. C. Ambrister, Chickasha. 2nd vice-pres., R. R. Hume, Minco; secretary A. B. Leeds, Chickasha. Delegate J. C. Antle, Chickasha.

Pushmataha County elected the following officers at Antlers, December 14th. President, Ernest Ball; vice-pres., H. C. Johnson, Antlers; secretary-treasurer, J. A. Burnett, Crum Creek; censor, Geo. Robinett, Albion.

Doctors O. J. Colwick and J. T. Colwick, Durant, were after an open trial before the Bryan County Society, expelled as to the former, while the latter received a verdict calling for suspension from membership for twelve months.

Dr. D. A. Shoun, Fairfax, and his family departed for Canon City, Colorado in December, expecting to remain for several months, during which time Dr. Shoun will take up post graduate study, returning to Fairfax in the Spring.

University Hospital Contractors, Oklahoma City, have promised to have the addition provided for by the last legislature, ready for occupancy in three months. 100 beds of the addition will be available for use of ex-service men.

Dr. E. L. Cohenour, Tulsa, is in St. Louis where he will remain for several months, during which time he will take urological studies. He will be associated during his stay with Drs. John R. Caulk and J. Hoy Sanford, University Club Building.

Dr. J. T. Martin, Oklahoma City, seems to be blessed with a "Jinx" of the publicity type. His latest is a message to the doctor, complaining that he is hard to find. Dr. Martin might suggest that busy men are always in that situation.

Dr. Geo. H. Wallace, Cheyenne, has returned to that place for resumption of his practice after an absence of several months during which time he attended the Mayo Clinics. Dr. Wallace intends to establish hospital facilities in Cheyenne.

Dr. H. M. Reeder, member of the Pottawatomie County Medical Society and for the past two years associated with the Shawnee Clinic, has resigned from the Clinic and removed to Greenfield, Blaine County, Oklahoma, where he is located to practice medicine.

Enid Chamber of Commerce officially withdrew their city from the race for location of the Soldiers Hospital stating that they believed they had little chance, and that there were other locations more centrally situated and more fitting.—A sensible decision.

Theodore Franklin Andreskowski has come to town. This lusty young man has taken up a permanent abode at the residence of the proud parents, Dr. and Mrs. W. T. Andreskowski, Ryan, who announce his arrival on December 27th. May he grow strong and powerful and make a useful worthy citizen of the Nation is the wish of the JOURNAL, tendering our congratulations at the same time to his parents.

Oklahoma County Society, through its banquet committee, issued invitations to a large number of the profession over the State to attend a "Gridiron Banquet" at the Chamber of Commerce Rooms, Saturday, January 14th. The affair was largely attended and a success.

Dr. M. P. Springer, Tulsa, according to Claremore papers is contemplating the erection of a bath house at that point for the purpose of rendering necessary hydrotherapeutic services to the many visitors going to that place in the hope of receiving benefit from the hot wells.

Dr. Thomas W. Dowdy, Wilson, mourns the loss of his wife, Jessie C. Dowdy, who died at a Ft. Worth hospital after a short illness. In an effort to save her, she was taken to that city by airplane by Dr. Dowdy and Dr. Walter Hardy of Ardmore. She is survived by one child, a daughter.

Kay County Society drafted the following for officers for the ensuing year: President, D. W. Miller, Blackwell; vice-pres., E. E. Waggoner, Tonkawa; secretary H. S. Browne, Ponca City. Dr. L. A. Turley, professor of Pathology, State University read a paper on "Some Newer Ideas Concerning Tumors".

Garvin County Society elected officers for 1921 December 21st. They are: President, W. E. Settles, Wynnewood; vice-pres., John R. Calloway, Pauls Valley; secretary-treasurer, Jas. W. Stevens, Pauls Valley; Delegate E. E. Norvell, Wynnewood; censors, James R. Calloway H. P. Wilson, N. H. Lindsay.

Oklahoma County's Tuberculosis Hospital, thought to have been assured when the voters voted bonds for construction, has encountered possibly a fatal defect in the State Law which prohibits counties contracting indebtedness above certain limits. The matter is under consideration by the Attorney General.

Muskogee Kiwanians set aside time for eulogies on Dr. Sessler Hoss, one of their charter members, January 3rd. Addresses voicing regret at his untimely death, noting many of his fine qualities, and especially deprecating the loss to Muskogee, were delivered by Drs. P. P. Nesbitt, M. K. and C. A. Thompson.

Dr. W. L. Kendall and Miss Wanda Eubanks Kerr of Enid were married in that city Sunday, January 8, 1922. They will make their future home in Enid where Dr. Kendall resides as one of the State's most successful physicians. The JOURNAL extends its hearty congratulations and best wishes for a long and happy union.

Dr. C. E. Burford, St. Louis, will be the "Lion of the Hour" January 23rd, when he will deliver an address on "Surgical Aspects of the Kidney" to the Muskogee Medical Society, which will meet at 8:00 P.M. in the ----- Muskogee. Invitation is extended to any physician who may wish to attend to be present at this meeting.

Ponca City Hospital is possessed with an "Angel" worth while in the person of E. W. Marland, one of Oklahoma's greatest and most successful oil magnates. Mr. Marland accepted the responsibilities going with great riches and success by sending the hospital a Christmas greeting in the form of a check for \$5,000.00. We wish every community had its Marland.

Duncan Physicians held the spotlight during "Health Week" at the Rotary Club, when the program was given over to the Medics. Preliminary to the festivities each doctor was asked to introduce himself and state his favorite indoor sport. This was the collection: Dr. Wharton-volley-ball. Dr. Nieweg-telling jokes. Dr. Frie-Poker (a man after our own heart). Dr. Bartley-Rook. Dr. Carmichael-Reading the Dallas News. Dr. Williamson plays no favorites, takes an interest in all things—but his fellow club members immediately launched into song, the title being "He's a liar".

Rogers County Society, meeting at Claremore December 15th, elected the following officers: President, A. M. Arnold; vice-pres., L. H. Henley; secretary-treasurer, W. P. Mills, all of Claremore. It was decided to hereafter hold meetings the first Thursday night of each month, Dr. Wm. Porter Mills of Claremore donating his offices for place of meeting.

Internationalizing Sera Standards is the task, unknown to the general public, and only one of the small functions of the League of Nations Health Committee, which when executed will tend to simplify and improve laboratory work throughout the world. The scope includes the entire civilized habitat of man, including the United States, though we are not a party to the League.

Dr. W. J. Trainor and Mrs. Augusta Cliness, Tulsa, were married December 25th, at Friends Church, Wilmington, Delaware. After a short visit with Cincinnati, Ohio friends they returned to Tulsa where they will reside, Mrs. Trainor was formerly the wife of Dr. George Cliness living in Tulsa for 4 years. After his death she frequently visited Tulsa and her parents Mr. and Mrs. Reuben Putnam Barrett.

Dr. J. M. Byrum, Secretary State Board Medical Examiners, reports that at the regular quarterly meeting held January 10 and 11, the following doctors were granted license in Oklahoma. Dr. B. A. Credille; Dr. E. E. Church; Dr. L. L. Washburn; Dr. Hugh H. Monroe; Dr. L. J. Spickard; Dr. F. G. Beard; Dr. J. J. Willingham; Dr. J. F. Hedrick; Dr. J. H. Payne, duplicate; Dr. W. S. Cary, duplicate; Dr. Harry L. Hall; Dr. D. C. Kalloch; Dr. J. C. Braswell, Jr.

Dr. Jesse C. Busheyhead, Claremore, now holds the distinction of being Assistant Chief of the Cherokees, the Nation in which his family, since events have been recorded, occupied the stage allotted to those who control the destinies of the people. Dr. Busheyhead's father was for many years the sage advisor of his people, holding the office of Chief Executive in the palmy days of Tribal greatness, so it is fitting that the son follow in the foot steps of his father.

Woodward County Society elected officers for 1922 December 7th, as follows: President, Dr. E. L. Bagby Supply; vice-pres., J. M. Workman; Secretary-Treasurer C. W. Tedrowe, Woodward. Censors, J. L. Forney and J. L. Patterson, Woodward; T. B. Triplett, Mooreland; Delegates, J. L. Patterson and C. E. Houser, Vici. For the coming year meetings will be held the first Wednesday in February, April, June, October and December. Drs. Forney and Tedrowe were designated as a committee on program and work for the society.

The Ophthalmic Section, St. Louis Medical Society announces a course of lectures in Ophthalmology, to be given in St. Louis by Professor Ernst Fuchs, Vienna, during the month of February. Information as to details may be had by writing The Fuchs Lecture Committee, St. Louis Medical Society, 3525 Pine St., St. Louis. Professor Fuchs, of course, will prove a drawing card second to none, among the specialists above all. His cordial entree to the American Profession is attested by the fact that he is vouched for by the profession of St. Louis.

The New Shawnee General Hospital has been completed and is open for business. This is now a modern hospital of one hundred beds capacity with elevator and silent signal system, and is a Class A hospital. Miss Anna K. Shaw, R. N., Superintendent; Miss Ethel Byrum, R. N., Supervisor of nurses and Miss Gene Merritt, R. N., Night Supervisor; and Miss Ethel Haekler, R. N., Supervisor of Operating Room and a training school of thirty pupil nurses at the present time. The members of the Portawatomie County Medical Society constitute the surgical and medical staff at the hospital.

The State Serological Association, according to announcement of Secretary, Dr. Wm. H. Bailey, Oklahoma City, will hold a joint meeting with the Tulsa County Medical Society in the latter City January 23, 1922. The general plan tentatively arranged calls for a short program on some technical serological problem for the afternoon while the evening meeting will present a paper from Dr. W. Forrest Dutton, Tulsa, on "What the Internist Expects from the Laboratory"; Dr. Wann Langston, Oklahoma City, Medical Superintendent, University Hospital, will present a paper on "What the Laboratory Expects of the Doctor". The two papers will then be open to a general discussion, after which some procedure along the line of a "Round-Table" discussion will be held.

Muskogee County Society meeting January 9th adopted a resolution defending Dr. I. H. Hollingsworth, city physician, whose removal from office had been demanded by the American Legion for alleged neglect of an ex-soldier. It developed that probably the entire sensational mess emanated from ulterior medical sources, with an "axe to grind", that the alleged desperate plight of the man never existed, that at any rate he had been given prompt attention by Dr. Hollingsworth long before the Legion appeared on the scene and finally, the man, reported at deaths door, was able to board a train for a long trip the day after he was supposed to have been about to pass over. This verdict, unquestionably the correct and just one, should be borne home to the Legion and to all others given to "flying off the handle" and filing sensational charges against innocent persons. Certainly medical officials have had enough row to hoe for their inadequate regard without having to carry a load of extra irritations. Clinical reports were heard from Drs. Hollingsworth, on "Cerebro-spinal syphilis" and Dr. P. P. Nesbitt reported a case in which the diagnosis was uncertain; hemorrhage into the anterior horn of the cord or cerebro-spinal syphilis being considered.

The "Enid Eagle" demonstrates its usual capacity for appraising things utterly beyond its ken by "Insulting" human intelligence in perpetrating the following editorial, so-called:

"THE INSULT TO DR. LORENZ.

The action of some contingents of the medical profession in America in refusing to cooperate with Dr. Adolph Lorenz, famous Austrian surgeon who came here out of gratitude to minister to the people of this country because of their relief of the sufferings of starving children of his native land, is a slam on the whole medical fraternity and will continue so to be until their indefensible actions are properly condemned and repudiated by them.

If Dr. Lorenz had done nothing else in all his lifetime except restoring to perfect health little Lolita Armour, the daughter of the rich Chicago meat packer, whom the greatest surgeons in America said was a hopeless cripple and would remain so all her life, but who was restored to perfect health by the skillful adjustment of this celebrated doctor, common courtesy would require that he be given a warm and generous reception by the medical profession here."

While the Bartlesville Examiner evidences its capacity for not getting at the fundamentals of professional refinement and propriety by offering this weighty opinion: "THE DOCTORS' CLOSED SHOP"

The petty spitefulness shown by the Chicago physicians in their attitude toward Dr. Adolf Lorenz, the famous bloodless surgeon of Vienna, is not doing the medical profession any good. This attitude of opposition to the famous surgeon seems to be the style among physicians as the New York surgeons are now trying to prevent him from holding clinics there. Those of you who have seen evidences of petty jealousy among the physicians in smaller places probably thought this trait was characteristic only of the small men of the smaller places. There seems to be a "closed shop" among physicians which is not confined to the smaller places."

DOCTOR GEORGE W. TILLY

Dr. Geo. W. Tilly, Pryor, died suddenly at Muskogee, December 17th. He was born December 5, 1871 at Epperson, Monroe County, Tenn., his father being James L. and his mother Sarah (McAfee) Tilly. After undergoing the usual vicissitudes incident to the youth of the South during his early days he attended medical schools at the Louisville Medical and Chattanooga College, from which he graduated. After practicing for eight years in Tennessee he moved to Indian Territory, locating at Pryor where he has since lived except during his absence in War service, for twenty-eight months, where he held the rank of Captain in Medical Corps. For many years he was Health Officer of Mayes County and also held other official positions from time to time. He was a member of the Southern Methodist Church and the Masonic Fraternity, and was buried at Pryor under the auspices of the latter organization. He was also a member of his county, State and the American Medical Association. He is survived by a wife, three sons and a daughter and has three brothers to mourn his loss, one of them being Dr. W. T. Tilly, Muskogee.

Dr. Tilly was a good, clean man and citizen, always aligned with the better element and stood for the higher things of life. Perhaps the best that may be said of him is that he was his own worst friend, in that his sympathy and kind attitude toward all men and things permitted him to occupy the role too often occupied by the Oklahoma Doctor in the small town and rural district, that of a willing servant, without reward in any guise. Naturally the physician occupying this role leaves behind him a host of friends who only realize his many services to them and his worth to them after he is called to his reward. His professional associates of the Mayes County Medical Society adopted the following resolutions of respect for their departed colleague.

As the years pass in rapid succession we are made to realize more and more through its various vicissitudes the uncertainty of life.

Age, sickness, accident, disease, through these agencies of death the Grim Reaper stalks in our midst sparing not even those who fight on and on unafraid amid the stress and storm of life's darkest hours.

News of the death of Dr. G. W. Tilly comes as a shock to all who have been in touch with him, and we tenderly refer to his memory:—

As a member of the Pension Board of Examiners.
As president of the Mayes County Medical Society.
As member of the State Medical Society.
As member of the American Medical Association.
As captain of the Medical Corps in the World War.

Therefore be it resolved:

That we the members of the Mayes County Medical Society extend to the bereaved family the sympathy of our membership.

That a copy of these resolutions be sent to the family.
That a copy of these resolutions be printed in each of the local papers.

That a copy also be sent to the State Medical Journal.
That a copy of these resolutions be spread on the minutes of our Mayes County Medical Society.

Very Res'p'y, Ivadelle Rogers, M.D., Secty.

The Tulsa World, mostly believed by Oklahoma doctors to be that profession's most potent irritant, possessed with the faculty to "rub their hair" the wrong way more than any other, does not always hold to that role, as will be shown by the following strong tribute to a former physician of Oklahoma who recently died from yellow fever in Mexico.

"Soldiers of the Common Weal."

Truly a hero and a martyr in the best sense of the terms was Dr. Howard B. Cross, the Oklahoma physician who volunteered to go to Mexico as an investigator of yellow fever and swamp fever in their natural habitat. This

young man, while carrying out his work, contracted the dread malady and quickly succumbed.

The uniformed soldier who was shot while on duty at the listening post during the late war was no more a hero, no more a patriot, than was this young physician. We need not discuss the academics of the various schools of the healing art. Let us consider only the outstanding facts.

Here was a man of science who better than most, knew the dangers he incurred. Yet he went forth willingly—that he might acquire information which would arm humanity against one of its dread enemies. When we discuss bonuses, if we must think of such things in connection with great and unnobling sacrifice, what shall we say should be done for the family of Doctor Cross—or for other such soldiers who have fought and lived?"

DOCTOR SESSLER HOSS.

Dr. Sessler Hoss, Muskogee, is dead. The shocking news of his tragic departure filled with grief the hearts of a host of friends and people who were endeared to him by reason of tender, thoughtful and intelligent care he devoted to their misfortunes. It is not exaggeration or mere casual tribute to the dead to say that perhaps no physician in Oklahoma brought to his circle of grateful friendship as many friends appreciative of his care and service as those who counted Dr. Hoss, not physician alone, but a real benefactor and friend in time of need. This statement indicates his leading and ever present traits; kindness, sympathy, alertness and service were combined in the man and those attributes were constantly in evidence in his work, which knew no class, nor made exception on account of social standing, riches, poverty or the low state of the person fortunate enough to be the object of his solicitation. Deep sincerity prompted the real expressions of regret on his death. On every hand were people who testified to his help in their hour of distress and their expressions of loss were real and from the heart.

Dr. Hoss was born at Emery, Virginia, February 8, 1882. His father, Bishop E. E. Hoss of the Methodist Episcopal Church, was one of that organization's greatest students, authorities and leaders, possessed of an extraordinary brain capacity, which was so applied that he was one of the gifted and informed men of the country, his knowledge covering not only clerical affairs, but extending to many of the arts and sciences to an astonishing degree. Much of this natural sense and ability was inherited by Dr. Hoss who, though handicapped throughout his life by a frail physical system, overcame all difficulties by his steady application and will power. He received his literary education in the common schools of Virginia, and in Vanderbilt University, Tennessee, but his constant ill health never permitted him to complete his studies in the latter institution. After that time he entered Jefferson Medical College, but again was forced to forego his studies and travel to New Mexico, where, after a protracted stay he felt able to enter the Southwestern University Medical College, Dallas, from which he graduated April 3, 1900. At that time he evidenced his unusual ability and future success, holding the greatest respect of his faculty and fellow students, who always regarded him with great esteem and admiration. Shortly after graduation he moved to Muskogee, entering partnership with Drs. Fite, Blakemore and Thompson, where he remained for several years, later associating himself with Drs. Rogers, Callahan, and Ballantine. In 1921, only a few months prior to his death he associated with Drs. White, Oldham, Ballantine and Holcombe, forming the Baptist Hospital Clinic. For several years he was Chief Surgeon of the Midland Valley Railroad and also Physician to the Oklahoma State School for the Blind, and the interest and attention

(Continued on next page)

given the students of the latter was marked and exceptional from the standpoint of fine service, his natural sympathy and close attention to detail making him a real benefactor to the unfortunates in the school, who regard his passing as an irreparable loss.

He was married to Miss Irene Morrow of Nashville, Tenn., the chum of his boyhood, and the union, marked for its devotion, was blessed by one surviving child, a little girl 18 months of age at his death. He is also survived by a brother and sister, his parents both having passed away a few years ago. Burial was had in the cemetery at Muskogee by the side of his parents.

Words are inadequate to approach a proper estimate of the many virtues inherent in Dr. Hoss. He was possessed with great courage and was always allied with the moves for betterment of his home city, the citizens counting him as one of their best, socially, morally, intellectually and professionally. His few faults were so insignificant that they were unobserved or forgotten in the presence of his merit. His bearing at all times was most courteous and in all the smaller things of daily life he was punctilious and attentive to a high degree. No occasion robbed him of his fine regard and sympathy for all around him. His viewpoint on all matters concerning life was high and lofty and no appeal passed him without response if it was in his power to aid. This last attribute, no doubt, helped to bring him to his untimely end, for his devotion to duty and service was of that character which permitted no shirking or neglect. His friends commonly noted the fact that his close interest in the troubles about him wrought heavily upon his physical strength and too often he paid the penalty of this expenditure of his forces by suffering and illness. Muskogee and Oklahoma and the people counting him friend and physician cannot adequately measure their loss and they sincerely feel that they have suffered an irreparable loss in his taking away.

TRIBUTE OF THE PRESS TO DR. CROSS.

The following beautiful tribute to Dr. Howard Cross, a young Oklahoman, who made the supreme sacrifice often exacted from the physician, is reproduced from the *Tulsa Tribune*. His death brought almost universal regret from every paper in Oklahoma.

Oklahoma Grieves—But is Proud.

Last night's dispatches brought the news from Vera Cruz, Mexico, that Dr. Howard B. Cross, of Oklahoma, died there yesterday, a victim of the yellow fever. Doctor Cross the A. P. story went on to say, opened a laboratory in Vera Cruz early in the month for study of the yellow fever and the marsh fever for the Rockefeller institute. Recently he went into the center of the yellow fever district at Tuxtepec so that his studies could be first-hand. He contracted the disease and died.

Today it was learned that he came from Waukomis, Oklahoma. That community should feel a solemn pride today. One of its sons, a graduate of its state university, has just made a noble sacrifice. No war hero was greater than this man who sacrificed his life for science and humanity while engaged in the effort to eradicate yellow fever from Mexico. No loftier shaft should rise above another's grave than should point heavenward from his. No mother and father should believe that they have given a son for a worthier cause than have the parents of the 33-year-old scientist.

Oklahoma grieves—but is proud.

MISCELLANEOUS

ADRENALIN

Adrenalin has been associated with the name of Parke, Davis & Co. for so many years that one suggests the other. It was that firm which met the challenge of therapeutic

progress in 1900 by directing its research work to the isolation of the active principle of the suprarenal gland, and which early in 1901 announced the success of its investigations and experiments. Since then Adrenalin has been universally recognized as a P. D. & Co. product—which it still continues to be.

A neat little brochure on "Adrenalin in Medicine" is offered by the manufacturers to interested physicians.

Abstracts, Observations from Current Medical Literature

"OSTEOCHRONDRITIS DEFORMANS JUVENILIS OF THE UPPER EPIPHYSIS OF THE FEMUR"

Albert Mouchet and Georges 111.

(*Revue d'Orthopedie*, February 1921. Translated from French.)

The article is a general review of this subject and very ably covers the whole field from the time Legg of Boston first wrote of it in 1910 as "A vague and obscure affection of the hip joint" up to the present.

He states that the term "Perthes Disease" should not be used, as Perthes did not write of the condition until three years after Legg and Calve described it. He admits however that the term "Osteochondritis deformans juvenilis" is the most satisfactory up to date.

It is a condition formerly not distinguished from tuberculosis of the hip. It occurs about twice in 100 cases of tubercular hips. About one third of the cases are boys. Prevalent age is 3 to 12 years. Never later than 13.

The first symptom is a limp. There may be little or no pain and atrophy may simulate tuberculosis. One distinguishing feature is that the movements of the hip are limited very little except in abduction which is always limited. The spasm of the abduction disappears under anesthesia.

The clinical side is of very little importance, but the radiograph shows a very particular aspect of the femoral head, of the epiphysis, and of the neck of the femur.

(1) The femoral head is flat, or Crecentric and fragmented.

(2) The Epiphyseal cartilage is very irregular and does not present a clear outline.

(3) The femoral neck may have transparent spots and present a coxa vara or coxa valga aspect.

(4) The acetabulum is nearly always roughened and the inter articular line exaggerated.

The affection lasts about 20 months and is not complicated by destruction of bone nor abscess, nor even ankylosis. He believes that very many malformed hips in adults where the head of the femur is flat and neck thick, are the results of osteochondritis in infancy.

The treatment is rest. If the child suffers, immobilization in plaster or splint is best.

In his discussion of the pathology he feels as Waldenstrom, that it cannot be a form of tuberculosis. He does not think it is hereditary syphilis as does Roberts. He does not agree with Calve that it is a form of rickets. Brandes has raised the hypothesis that it may be a glandular secretion problem, and Deletala had thought it may be a congenital alteration of the epiphysis, but he cannot see reason in either theory. He thinks traumatism in the history is so often of such a mild nature that it could not be the cause as Legg has insisted.

He believes that it is similar if not the same affection known as Arthritis deformans of the hip.

Earl D. McBride, M.D. Oklahoma City.

"THE ABDUCTION TREATMENT OF FRACTURE OF THE NECK OF THE FEMUR"

Royal Whitman, M.D.

Jour. A. M. I. December 3, 1921

After quoting several authorities on past methods of treatment in which restoration of function and form is

considered secondary importance, he elaborates upon the efficiency of the abduction method which he devised many years ago, stating that it is "by contrast radical and revolutionary, simply because, being mechanically adequate for its purpose, fracture of the neck of the femur, in all operable cases, is treated like other fractures, in complete disregard of the qualifications and restrictions of conventional practice, and of the conclusions that uphold it."

"The abduction method is adequate because it utilizes the anatomy of the hip joint both to correct deformity and to oppose displaced fragments, external appliance being entirely subsidiary to the internal, natural splinting."

He proceeds then to show why this is true and gives in detail his well known method of treatment.

He states that the mechanical accuracy cannot be devised but that the question arises as to whether or not it is worth while in view of its danger to life, its essential utility and the danger to repair of disturbing a fortuitous fixation.

In answer to the question of its danger he argues it is the only method which successfully allows the patient to be moved into desirable positions thus preventing hypostatic congestion and bed sores.

As to its utility he says repair is primarily a question of opportunity rather than of nutrition since other fractures unite readily in ages and subjects, while non union after fracture of the neck of the femur occurs even in childhood under conventional treatment.

As to the danger of disturbing impaction, he claims that the theory of one fragment being telescoped by the other is merely a traditional interpretation of physical signs that is rarely confirmed by roentgen-ray or by treatment. The correction of deformity by the abduction method, supplemented as it is by secure fixation, actually favors repair because it opposes the fractured surfaces which in most instances are completely or partly separated by the destruction.

Earl D. McBride, M.D. Oklahoma City.

NEW BOOKS

A TREATISE ON CATARACT.

A treatise on Cataract. Donald T. Atkinson, M.D., San Antonio, Texas. Octavo, 150 pages, 29 plates. The Vail-Ballou Company, New York City. The book is well printed in large clear type. The history of the operation for cataract is briefly given. Attention is called to the fact that the general practitioner frequently has the cataract case under observation for a considerable time before it is sent to the oculist, and that failure to distinguish failing vision from glaucoma or fundus lesion, from cataract, sometimes results in disaster. The diagnostic points of cataract are enumerated for his benefit.

The examination and preparation of the patient are discussed in detail. The author favors the combined operation and the various steps in its performance are described clearly and in detail. The book is illustrated with photographs of the steps of the operation. The author has given us nothing especially new, but his book is practical, well written and readable.

C. M. F.

THE SURGICAL CLINICS OF NORTH AMERICA (The New York Number)

The Surgical Clinics of North America (Issued serially, one number every other month) Volume 1 Number 6 (The New York Number) 295 pages, including complete Index to Volume 1 and 122 illustrations. Per clinic year (February 1921 to December 1921). Paper \$12.00 net; Cloth \$16.00 net. Philadelphia and London: W. B. Saunders Company.

This issue contains one matter, which has long been of unusual interest as well as a source of irritation and feeling of outrage on the part of honest surgeons coming in contact with the type of cases in the course of their work—

"Traumatic Hernia" By Dr. John J. Moorhead, Professor of Surgery, New York Post-Graduate Medical School etc, who, in passing, must be acknowledged as having produced the most practical work in existence on industrial and traumatic surgery. Briefly stating a classification of herniae into degrees, he proceeds: "Given, then, some standard as to the 'degree' of any hernia, what is to be said as to the relation of a given injury to the production of the hernia? There are three main phases to this inquiry, namely: (1) Is there any such thing as 'traumatic hernia', one arising solely from a single act of violence? (2) If not, how does a single act of violence affect the development of hernia? (3) And again, what is the effect of repeated acts of violence in the production of a hernia?"

After discussing certain relations, he answers question (1) "No", "unless the violence has caused a severing of the *overlying muscular and fascial protectives*." Questions (2) and (3), he answers with many reservations, but particularly voicing the importance of individual physique, type of traumatism, place of its receipt, receptive state of individual muscles, that is, their tendency to increase or aid intra-abdominal pressure. Surgeons should not forget some of the observations here made: a few of which we will repeat, at the expense of being tiresome. "It is absurd to believe that a piece of intestine or omentum can be forcibly crowded into a normal ring or canal without the patient's knowing about it until hours, days, or weeks later. Yet that is the history we get." "We have fractures of the pelvis, of the thighs and all sorts of injuries in the inguinal region, but who ever saw or recorded a case in which a hernia was an accompaniment?" "External violence is only one of many factors in activating intra-abdominal pressure which is the essential causative element." Much more is said, but we make this statement for the benefit of those having a too prevalent habit, one without basis of professional justification, indulged in to an alarming degree in the presence of corporations charged with personal injury responsibility. We seem to have two standards of honor if the records in this matter are reviewed. Physicians called to testify as to etiology factors of hernia, claimed to be incident to injury, impossibly stretch the insignificant possibility of trauma as a cause, until we behold that minor phase, craftily built up and into the most important of all factors. That this is an injustice only possible by the dishonest cooperation of interested, unscrupulous surgeons testifying for a fee, to any distortion necessary to the success of their side of the case, is the most humiliating memory in the experience of the writer. That we have only one remedy, the fullest knowledge and agreement on the subject, is admitted. Moorhead has gone further in systematizing the facts incident to hernia of this claimed etiology than any other writer. The article should be read by every physician. The issue contains, as it always does, a fine selection of the problems of the doctor.

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NUMBER 2

A PRACTICAL METHOD OF SELECTING DONORS FOR BLOOD TRANSFUSION

GAYFREE ELLISON

University of Oklahoma, Norman, Okla.

When the loss of blood due to acute hemorrhage has been severe it is frequently necessary to replace the lost volume in order to sustain life. This operation is always an emergency, as a few hours delay may mean the death of the patient. Experimentally it has been found that when the loss of blood exceeds one half the total blood volume the animal dies. However, even with this great loss, life may be sustained by replacing the blood volume with some solution. Clinically we know that when the loss of blood from acute hemorrhage reaches about one-third of the total volume there is grave danger unless the lost volume is replaced at once. The blood volume may be replaced with:

1. Whole blood.
2. Blood plasma.
3. Normal salt solution.
4. Colloidal solutions as Gelatin, 2 to 6%.
5. Tragacanth or Acacia solution, 2 to 6%.

Normal salt solution alone, so commonly used, is of doubtful value. At best it is only temporary. Salt solution is rapidly diffused into the tissues, leaving the blood vessels empty, and bringing about an acute oedema of the lungs and other organs that may prove fatal.

Colloidal substances of certain osmotic tension, such as Gelatin and Acacia, are much better. Of these, a solution of Acacia is to be preferred. In severe hemorrhage a 6% solution of Acacia in normal (.85%) salt solution should be used intravenously. In less severe hemorrhage a 3% to 4% solution may suffice.

The advantages of Acacia over Gelatin may be mentioned. It is colloidal in nature but contains no proteid substance, thus avoiding anaphylactic reactions. It is neutral in reaction while Gelatin is acid. It is difficult to obtain pure Gelatin free from acids. Acacia may readily be sterilized by boiling or in the autoclave. We believe that when whole blood is not available for emergency trans-

fusion, Acacia or Tragacanth solution should be the choice.

As whole blood has proven by far the most valuable substance to replace the loss of blood from the system it should be used in all cases when possible.

The modern indirect or citrated blood method of transfusion has made it possible for almost any one with moderate technical skill to do a blood transfusion. However, on reading the literature on methods of blood transfusion, selection of donors and the severe reactions and accidents that occur when using hit and miss methods, one cannot but hesitate to perform this necessary operation where laboratory facilities and trained technicians are not available or convenient.

The Moss method of blood grouping has become the standard. His original method, or some modification of this method, is now universally used in selecting suitable donors. According to Moss' studies, now generally accepted, every human being belongs in one of four groups, depending upon the relation of the agglutinating and hemolyzing activity of blood serum of one individual to red blood cells of another. For convenience we quote the Moss blood grouping:

Group I. Serum agglutinates *no* corpuscles. Red blood corpuscles are agglutinated by serum of Groups II, III, and IV.

Group II. Serum agglutinates the corpuscles of Groups I and III. Corpuscles are agglutinated by the serums of Groups III and IV.

Group III. Serum agglutinates the corpuscles of Groups I and II. Corpuscles are agglutinated by the serums of Groups II and IV.

Group IV. Serum agglutinates the corpuscles of Groups I, II, and III.

Corpuscles are agglutinated by *no* sera.

The blood from the same group has no action on the other, except a possible serum or anaphylactic reaction due to foreign proteid. Approximately 10% of the population fall in Group I, 40% in Group II, 7% in Group III and 43% in Group IV. Moss and others have

demonstrated that the isohemolysins and iso-agglutinins in the blood of either the donor or patient caused the severe reactions and accidents following transfusion of whole blood when the donor and recipient were not in the same group.

In an article by Moss in American Journal of Medical Sciences 1914, No. 147, page 698, the value of selecting a donor of the same blood group as the patient was ably demonstrated. Later it was found, especially during the war, that donors from Group IV could be used in an emergency without much danger of accidents, so this group is known as the universal donor.

In order to properly carry out the Moss-grouping it is almost necessary to have a well equipped laboratory, skilled technicians, besides having on hand, at all times, the blood serum or corpuscles of Groups II and III. Unless donors of the known groups are known it is sometimes difficult to find a suitable donor in an emergency.

Moss and later Ottenberg have pointed out that iso-hemolysis, the most dangerous reaction that occurs, is always accompanied or preceded by iso-agglutination. Several attempts have been made in recent years to simplify the technique of selecting suitable donors, by simply testing the blood of the donor against the patient for agglutination.

Recently we have been making a study of the method reported by Drs. Payton Rous and J. R. Turner of the Rockefeller Institute in the Journal of American Medical Association, June 12th, 1915, Vol. LXIV, Page 1980. This method was used successfully in the hospitals during the war. Our studies have been confined mainly to comparing this method with the more elaborate blood grouping. These studies indicate that when this simple method found the blood of donor compatible with the blood of the recipient they were in the same group of the donor, sometimes in Group IV. As the technique is quite simple, and the apparatus required usually found in any moderately equipped physician's laboratory we feel that the method with a little practice can be used in almost any doctor's office.

No known group of serum is required. It is not a method of grouping but simply a method of finding a suitable donor. The apparatus and reagents required are:

1. A microscope.
2. A 1 to 10 white cell (leucocyte) diluting pipette.
3. Six or eight small test-tubes (Wassermann tubes).
4. A few (8 to 10) capillary pipettes (Wright's) which anyone can make from glass

tubing. We use a 4 mm. soft glass tubing.

5. Microscope slides and cover glasses.

6. About an ounce of fresh 10% solution of Sodium citrate in water.

7. About an ounce of normal (.85%) salt solution.

Collecting the blood: Select two or more prospective donors. Blood is taken from the patient and each prospective donor. First collect the blood from the patient. A sufficient amount of blood may be obtained by making the usual puncture of the tip of finger or lobe of the ear. The 1 to 10 white cell pipette is first rinsed out with sodium citrate solution. Then sodium citrate solution is drawn up in the pipette to the mark 1. Rapidly fill the pipette with blood to the mark 11. It is necessary that the blood flow quite freely from the puncture so that air bubbles are not drawn into bulb and to prevent clotting. The blood is then expelled into a marked Wassermann tube. We now have a 1% citrated blood which will not clot. If several donors are to be tested two pipettes full of blood should be taken from patient. The white cell pipette is simply rinsed out with sodium citrate solution or with distilled water and is ready for use to collect blood from each prospective donor. One pipetteful is taken from each donor and expelled into tubes properly labeled with the name of the prospective donors.

Mixing. The blood of the patient and the blood of each prospective donor is now mixed in the Wright's capillary pipettes. Three combinations are made of the patient's blood and that of each prospective donor.

1. Nine parts of patient's blood to one part of prospective donor's blood.
2. Equal parts of patient's blood with that of donor.
3. One part of patient's blood and nine parts of prospective donor's blood.

The simplest method of measuring the blood is to make a pencil mark on the capillary pipette. A column of blood is drawn to the mark, allowing an air bubble between each column makes it quite easy to measure and count out the amount required. Nine parts of patient's blood,—one of donor's blood. In another pipette five volumes of patient's and five of donor's. In a third pipette one part patient's blood and nine parts of donor's blood. To insure proper mixing, the blood should be expelled on a clean slide mixed and drawn back into the capillary pipette. The end of the pipette may be sealed if it is desirable to transport the blood. Each pipette should be labeled with donor's name or number. The pipettes are kept at room temperature and readings may begin in five minutes.

Often unsuitable donors can be eliminated at once but one should wait 15 to 20 minutes before final readings are made. Microscopic agglutination is looked for.

Method of Reading. Break off the end of the capillary pipette and expel a small drop of the nine to one mixture of blood on one end of a clean slide. Add a drop of normal salt solution and put on a clean cover slip. At the other end of the same slide place a drop of the one to one mixture. The slide should be labeled with donor's name. Examine under microscope the low power 1-3 objective. Prepare a slide for each prospective donor. Fresh slides may be made every few minutes up to 15 minutes and no donor should be selected until after this time, but individuals with unfit blood may be eliminated in from 3 to 10 minutes. When agglutination occurs the red blood cells are seen adhering together in irregular clumps and masses of varying size depending upon the degree of incompatibility. The most striking picture (largest clumps) may be seen when there is nine parts of agglutinating blood to one part of agglutinated blood.

Selecting the donor. If after fifteen minutes incubation there is no clumping in either the nine to one mixture or the one to one mixture the inference is that the blood of the prospective donor and the blood of the patient is compatible; that is, they do not agglutinate or hemolyze each other, and transfusion is safe. The patient and donor usually belong in the same blood group.

Patient's blood 9, Donor's blood 1, No agglutination. Patient's blood 1, Donor's blood 1, no agglutination. Transfusion safe.

If there is clumping present in the nine to one mixture and little or no clumping in the one to one mixture it is certain that the blood serum of the patient agglutinates the corpuscles of the prospective donor and transfusion would be dangerous. The patient and donor are in different blood groups.

Patient's blood 9, Donor's blood 1, agglutination. Patient's blood 1, Donor's blood 1, slight or no agglutination. Transfusion dangerous.

If there is no clumping in the nine to one mixture and clumping in the one to one mixture the blood serum of the prospective donor agglutinates the corpuscles of the patient, while the risk of transfusion is less it is doubtful if donor's blood would be of much benefit because it is soon shunted out of the blood vessels.

Patient's blood 9, Donor's blood 1, no agglutination. Patient's blood 1, Donor's blood 1, agglutination. Value of transfusion doubtful.

If the patient's blood happens to be in Groups I or III it may be difficult to find a suitable blood even after the examination of several prospective donors. In the emergency the blood of an incompatible donor may be used, provided the corpuscles of the donor are not injured by the serum of patient.

The combinations of nine parts of patient's blood and one part of prospective donor's blood in one capillary pipette, and in another pipette 1 to 9 mixture, one part patient's blood, nine parts of prospective donor's blood is made. If there is no agglutination in the nine to one mixture with agglutination in the one to nine mixture, it indicates the blood serum of the prospective donor agglutinates the corpuscles of the patient. This donor's blood can be used because when such blood serum is introduced into the patient it is diluted in the circulation and otherwise combatted. The donor's blood is usually in Group IV and can be used in an emergency.

Patient's blood 9, Donor's blood 1, no agglutination. Patient's blood 1, Donor's blood 9, agglutination. Transfusion safe.

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Discussion

Dr. Lea A. Riely: Oklahoma City. A paper like this is of such practical importance to both internists and surgeons that I am sorry it could not have been read before a general session. Transfusion is done alike by internists and surgeon and there is no method of therapy which ought to be studied more than this as it has so many angles. So simple and harmless when properly done—so disastrous when improperly done.

The great danger is in injecting a foreign proteid into a blood stream as anaphylaxis. A patient transfused by some donors ought to be tested for agglutination before each transfusion. They ought to be desensitized if transfused more than one time. We had an example of this in Oklahoma City brought out recently, when patient transfused by same donor six weeks after first transfusion, developed anaphylactic shock and died within a few hours.

There is no more brilliant therapeutic result

than in injecting blood of a mother into her baby with an acute hemorrhagic disease of the newborn. There, we do not necessarily have to test for agglutination. In acute exsanguination where life is in danger, you will be justified in transfusing without laboratory test resorted to.

BLOOD TRANSFUSION—CITRATED METHOD

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In the early part of the present century the discovery was made that the condition of patients suffering from hemorrhage and various other pathologic conditions could be benefited by what was termed "direct transfusion of blood" from some donor, usually some other member of the family or some intimate friend.

Certain untoward results, however, to some extent cooled the ardor of those attempting this much heralded "Sine quo non" for all diseases and led to other and deeper investigation and revealed the fact that because of hemolysis the blood of one person could not be mixed with that of another. Severe reactions were more or less frequent, accidents due to clotting interfered and so it was natural that some modification of this method should be sought for, that would overcome these difficulties. The reporting of a fatal case caused by hemolysis by Pepper and Nesbit lead to further investigation.

Another caution, which should also be observed without fail, is to have a Wassermann on every prospective donor and use only those found to be negative.

Crile was perhaps the most enthusiastic advocate in this country of transfusion by the direct method and has explained his technic very thoroughly in his work on "Hemorrhage and Transfusion."

I regret I am unable to give the proper credit to the one who originally investigated the method now commonly known and spoken of as the Citrated Method of Indirect Transfusion but a careful search of such literature as I had available failed to give me that information. The recent great War, however, with its large number of severely wounded men to whom this treatment was administered, has done more to popularize this method than anything else since its use first began.

Indications for Blood Transfusion:

In a paper on "Sodium Citrate Transfusions" by A. L. Gaybat of New York, formerly Captain in the Medical Corps U. S. A. and Chief of Laboratory, General Hospital No. 12,

published in the Journal A.M.A. Jan. 4, 1919, there appears a very extensive but comprehensive classification of those cases in which this procedure is to be suggested and advised, from which I quote:

1. To replace blood in hemorrhage.
2. To stimulate blood forming organisms.
3. To alleviate or cure hemorrhagic conditions.
4. To act as a stimulant or tonic.
5. To neutralize or overcome effects of poison.

The author quoted above at great length subdivides the above classifications, but for the purpose of this paper, which it is desired to be brief and it is hoped will be practical, we will omit the subdivisions and consider simply the five classes mentioned above.

As mentioned above the recent Great World's War has been the means of bringing out many new ideas, prominent among which is the subject of this paper. The writers of ten different papers, from which many quotations will appear time to time as the author proceeds, almost without exception speak of the use of transfusion on wounded soldiers and of the many brilliant results obtained. The War is over but the lessons taught there should remain with us for many years and until we are able to improve upon them.

1. Speaking of the needs for this treatment, who is there that has not at some time in his professional career faced impending disaster from hemorrhage from an ulcer of the stomach? The writer can recall two such instances in his own career when for days and weeks following the hemorrhage the patient with lowered resistance was slowly nursed back to health again. If I had possessed at that time the knowledge I now have as to the value of blood transfusion, the patient, I believe, might have been restored to a far greater degree of health and in a much shorter time.

What has been said of hemorrhage from ulcer of the stomach is equally true in cases of ruptured ectopic pregnancy: especial attention should be called to the necessity for determining whether we are dealing with a hemoglobinemia or not. Patients suffering with a small percentage of hemoglobin will be slower to show results, though, of course, it is apparent they are in the greater need of treatment. Not all patients suffering from hemorrhage suffer from excessive lack of hemoglobin. This has been explained by one author in the following manner: as the hemorrhage progresses, the body puts forth a great effort to replace the lost blood with other fluids and in some unexplainable way the percentage of hemoglobin is maintained at an unexpectedly high figure.

2. To Stimulate The Blood forming Organs In Blood Disease:

Unfortunately not so much can be said of the success of transfusion of blood in this class of cases, which might be covered by simply naming Pernicious Anemia and Leukemia as in the classes we have just been considering. Of course, every one knows that these diseases in probably the greater majority by far are secondary and not primary in character. This method of treatment, therefore, is not recommended as a positive cure but simply an assistant while the real cause of the condition is being sought. True sufficient improvement may be seen to warrant the repeating of the operation several times and not infrequently those who have been doing a considerable amount of this work report they feel sure they have prolonged the life of their patients and made them quite comfortable for several years.

Lindmann of New York (Journal A. M. A. June 7, 1919) reports a series of 108 cases of pernicious anemia treated by "Direct Blood Transfusion", but while he makes mention of the fact that larger amounts of blood were used in these than in other cases, he unfortunately does not give us the end results and so the information is of no special value except to show the extent to which it is being practiced. He, besides, is a "devotee at the Shrine" of direct method and speaks in rather slighting terms of the method advocated in this paper; but he practically stands alone in this opinion.

In the hands of the careful and painstaking operator I believe this method of treatment well worth the effort in every case of pernicious anemia.

3. The third general class of cases where transfusion is indicated is the hemorrhagic cases of newborn children. In these, the writer has had no personal experience, but Dr. Harry Lowenbury, Pediatricist to Mt. Sinia Hospital of Philadelphia, in Jour. A. M. A. May 3, 1919, reports blood transfusion performed on a babe two days old in a practically moribund condition. In this case the blood was injected directly into the lateral sinus; 80 CC. being used with ultimate and complete recovery.

One advantage not to be lost sight of here is the fact that no testing of the blood is necessary if the mother's blood is used.

4. The fourth general class of cases for which transfusion is recommended are those in which a stimulant or tonic is necessary, especially in patients where an operation is necessary but is especially contraindicated in patients suffering from infected wounds in which the blood conditions are such as to make operative procedure a very grave undertaking.

In this connection I desire to report one case coming under my observation.

The patient, an over-seas soldier, was severely wounded in the left knee in the battle of the Argonne in August. It was the following March when he came under my care; every effort possible had been made to save the leg, but the long continued drain caused by the sepsis had left him with about 2,000,000 R. C. and about 39% hemaglobin; a resection of the knee was very desirable but his condition was such that it was not considered safe. Transfusion was decided upon and a donor secured whose blood was compatible with that of the patient and 500 cc of Citrated Blood was given; there was considerable reaction but the second day his Red Blood had increased to 3,500,000 and his hemoglobin to about 60; a very few days after this he was subjected to operation and, though it was a somewhat tedious one, he stood it very well and began to improve. Later on it was necessary to amputate the leg and his condition had improved sufficiently by this time so he was not given a second transfusion.

Much has been written and said concerning the beneficial results to be obtained from the use of Citrate Blood transfusion in cases of shock but of this the writer has no personal experience and so will not discuss it. The treatment seems such a logical one, however, that it would be well worth trying, the only disadvantage might be in the opportunity to secure on such short notice a suitable donor.

5. The fifth and last class of cases to be mentioned in this paper are those in which it is desired to overcome or neutralize the effect of bacterial infection. While it is obvious that reporting a small number of cases does not by any means conclusively prove the efficacy of any plan of treatment, the comparison of a practically equal number of patients treated by the same men in the same hospital, with and without transfusion, the patients taken without special selection, is of value in determining certain fundamental facts upon which we may lay the foundation of a rational course to pursue. The epidemic of Influenza of the year 1918 and also 1919 called for more effort on the part of the physicians as a class than anything that has occurred in recent years.

Doctors C. W. Ross and E. J. Hund of the United States Navy and stationed at the Mare Island Navy Yard furnish (Jour. A. M. A. Mar. 1, 1919) a report which is well worth studying. While their series of cases only comprise 49 patients, this is sufficient to start our investigations. Twenty-eight of these cases were treated with transfusion of Citrated blood and twenty-one were treated sympto-

matically. Of the twenty-eight cases transfused, twenty-two recovered and six died or 21.4% fatalities; of the twenty-one cases treated symptomatically there were twelve recoveries and nine fatalities or a percentage of fatalities of 42.8%—exactly double the death rate of those who did not receive transfusion. The average number of days before temperature was normal in those transfused was five and in those not receiving this treatment fifteen. It will be seen at once that the number of days in hospital for those transfused would be correspondingly less.

The writer desires to present a very brief report of one case of this character under his own observation. The case was seen while in service at Base Hospital Ft. Sill and was a soldier recuperating from an attack of pneumonia (as no case record or history of patient is in my hands I can only report the case from memory). At the same time the patient mentioned in a former class was in such a bad condition, this patient became alarmingly ill; transfusion was decided upon for the patient with the septic leg; the laboratory chief was consulted and readily entered into the plan to give the patient citrated blood. The four groups to be described by my co-laborer in this paper were prepared and a donor readily found in the person of a strong healthy and robust Sergeant of the Medical Department. Just when the blood had been prepared for administration the Chief of the Medical Service saw us and reported the pneumonia patient in a very grave condition and that it was probable he would not last through the night. The plan to give the citrated blood was changed and as it frequently happens both the patients came under group four the blood intended for the patient with the bad leg was given to the patient with pneumonia. In this case there was practically no untoward reaction and within twelve hours the patient was showing some improvement; in twenty-four hours he began to show a pyogenic infection in the form of an empyema for which he was operated with a complete recovery.

As stated elsewhere, the reporting of such a small number of cases is not considered sufficient proof for any form of treatment but the results should lead us to weigh them carefully and give to them the proper amount of credit.

Technic: Believing the laboratory worker can give more valuable information than I could upon the technic of transfusion I have requested Dr. W. H. Bailey of Wesley Hospital Laboratory to take up this part of the subject after which I will speak very briefly of one other point.

Dangers: In the presence of such an as-

semblage as this I do not need to more than simply mention that strict attention must be paid to asepsis in every part of this operation.

2. The blood of no individual should be used that is not free from syphilis as evidenced by a negative Wassermann.

3. We shall occasionally probably meet with anaphylaxis, but if we may judge the statement aright of those who have met with this unpleasant result, it is one that may be overcome at least in the most of the patients without serious after results.

Conclusion.

1. Citrate blood transfusion has a definite place in the field of Medicine to-day and the results, therefore, obtained warrant its continued use in properly selected cases.

2. It probably promises less, so far as end results are concerned, in patients suffering with pernicious anemia than any other class of patients on which it has been used.

3. The assistance of the laboratory is necessary that the proper groupings of the blood may be made and in this way prevent as far as possible incompatibility between the donor and recipient.

4. Elaborate apparatus is wholly unnecessary.

5. Reactions often quite severe will be experienced in the use of citrated blood; but these soon pass away and leave no permanent results.

6. The results obtained warrant the use of this agent, especially in cases when severe hemorrhage has occurred, to prepare a patient for operation when blood conditions are below normal and to combat bacterial invasion.

Discussion.

Dr. J. W. Riley, Oklahoma City. I believe Dr. Clark is to be congratulated on bringing this before the medical society. I think this belongs to the medical men rather than the surgeons. It is, as he has shown us, a very useful and elastic protection. The sodium citrate method was first brought out by a surgeon from Buenos Ayres. To determine definitely the percentage of sodium citrate that prevents coagulation he found that 2-10 of 1% would prevent coagulation and that 3-10 of a grain per kill. was toxic. Large doses are unnecessary and sometimes harmful. We must not think that care must not be taken in this matter because if we do not take care there is certain reaction that comes from the salt solution, and it sometimes causes death. I want to report one case which was transfused successfully twice from his brother, the third time from his wife. It had a marked reaction.

The transfusion was well advanced before he showed any symptoms and it was continued. He was again grouped and his wife regrouped and found that they were in the same class. Next he was transfused with his brother and no reaction. The fifth time we used his wife's blood and he complained. The transfusion was stopped and the man became unconscious and died next morning. We must bear this in mind, that we must use every care in the matter. In regard to the transfusion for hemorrhage many things have been tried out.

Dr. J. E. Hughes, Shawnee: I will call your attention to the fact that the mother could be used universally as a donor for the child. I am speaking particularly in hemorrhages of the newborn child.

Dr. Clark, Closing: I wish to thank you gentlemen who have given this discussion.

SURGICAL MANAGEMENT OF TWO CONGENITAL MALFORMATIONS OF THE NEW BORN INFANT

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After I accepted an invitation by your Chairman to write a paper for this meeting, I was at a loss as to what my subject would be. I was well aware that you had read of all, and seen some of the new surgical procedures that have been developed in the past few years, and for this reason I believed that a review of one of the old, if not the oldest, pathological condition found in infants, namely congenital malformation which develops in early foetal life, and has to be taken care of soon after the child is born, would be of interest to this section. The two conditions I shall attempt to review are Spina Bifida and malformations about the rectum.

The etiology of these effects is very obscure at the present writing. All sorts of theories have been advanced, and I believe Church and Peterson sum up the causes in a brief way. They say the cause has been attributed to injury to the foetus or to the mother during the period of gestation. In a number of instances these defects have appeared in several children in the same family, and even in succeeding generations, showing an hereditary transmission. Other children in the same family being born with hairlip or club feet. The condition is more common in females than in males in a ratio of about 8 to 7.

A theory which has been advanced by a few men as to the causes of congenital defects is that there is a disturbance of the ductless glands either in the mother or, possibly, the foetus itself.

For some unknown cause in certain cases

the epiplastic layers from either side fail to unite completely upon the dorsal aspect of the medullary groove. The spinal canal and its membranes thus remain open posteriorly. Due to this failure of perfect coaptation of the layers we find the Spina Bifida at different levels of the spinal canal.

Johnson in his text book gives a very brief and complete recapitulation of the differential diagnosis of the several forms of Spina Bifida. He says Spina Bifida in some of its varieties occurs about once in a thousand births. In the differential diagnosis the position of the tumor is of some consequence. Meningoceles occur almost always in the sacral region, the other forms, while they more commonly occur in the lower portion of the spine, may have their site in any region of the back. Meningocele is often a globular and more or less pedunculated tumor. The pedicle in myelocystocele is often narrow. If the two conditions are, however, combined the cleft in the vertebra is apt to be very much larger. In this latter composite group, the spinal cord is apt to be displaced backward. Its elements lie in the sack and are grouped on either side of the median line. In the meningocele and the myelocystocele, if the case is seen soon after birth, the skin overlying the tumor may have a normal appearance; later it is usually changed by pressure, more often by ulceration. This ulceration may be so extensive that it may not be easy to distinguish between these conditions and the cases of complete want of union. That is rachischisis and myelomeningocele. The cases of Spina Bifida occulta in which no tumor is present may be hard to recognize with certainty, unless a good X-ray picture may be obtained. In the last group you will usually find a dimpling of the skin over the sacral region or a more or less extensive growth of hair over this region.

The symptoms of Spina Bifida occulta such as slight paralysis of the lower limbs, irritation of the bladder and rectum may not appear until later in life, or are not recognized until the child reaches puberty or at least when the most active growth of the child is taking place. These delayed symptoms are probably due to the fact that the cord which is usually scar tissue which extends from the skin or beneath the skin to the spinal canal does not grow; in fact it contracts and probably produces a pressure or tension on the nerve filament or cord.

The large variety of forms with which developmental defects of the rectum and anus are met with, are of considerable surgical importance. As you readily understand, the defect has to be recognized, an early diagnosis and prognosis has to be made very early after the birth of the child. In order to be able to

diagnose, and give a prognosis as to the result of any surgical procedure, we should have fair understanding of the embryology of the early foetal life and formation of the rectum.

The embryological facts which it is necessary to understand in order to appreciate the explanation of the various malformations of the rectum are: that the rectum proper is formed from the hind gut of the embryo. That for a time the hind gut communicates with the allantois. That for an extremely short period the hind gut communicates with the neural canal or groove. That a pouch forms from the hind gut, the post allantois gut, as a posterior extremity of the embryo develops. That as the tail develops the prolongation of the gut grows down with it, this rapidly disappears, forming the post anal or tail gut. This part of the anal canal is formed by depression of the outer layer of the embryo, anal depression or proctodeum which opens into the hind gut. That the permanent opening of the genito urinary tract is at its formation intimately associated with the proctodeum. That the bladder is formed from a portion of the allantois, with which the hind gut for a time freely communicates. That the uterus and the vagina are formed independent of the intestines.

There are important congenital defects seen in our every day practice, some of these defects are hopeless as far as surgical procedure is concerned. But a great many of the defects, as I will attempt to explain with charts, are more or less simple when we are familiar with the early formation of the intestinal tract. First, absence of rectum and entire large intestine with fecal outlet at umbilicus. Second, imperforate rectum, with posterior urethral outlet opening into the bladder, opening into the uterus or vagina, opening into the neural canal. Third, is the proctodeum with imperforate anal canal, imperforate vulvar outlet, imperforate anterior urethral outlet. Anus well formed but ending in a culdesac. Irregular development as stricture, narrowing or tortuous condition of the lumen of the anal canal. Persistence of post anal gut, forming a diverticulum or congenital tumor.

Surgical procedures: In order to give the parent intelligent advice as to any surgical procedures, we should be able, first, to decide in our own mind, whether any surgical operation can relieve the child; secondly, if a surgical operation is advised, whether the surgical operation will be temporary or permanent; thirdly, if the operation is to be a procedure which will be permanent, we should decide the time, and by this, I mean the number of days following the birth of the child, we should wait.

In the first variety, if the outlet of the umbilicus is patent, no operation is indicated, but advice to the mother as to the care of the artificial anus, and the skin about the abdomen. This should be given in writing, and in detail. In the second variety with the outlets as I have mentioned an operation may be put off, possibly for several months with the expectation of having a better surgical risk, and I am convinced that in these cases, a temporary colostomy should be performed before any attempt of closure of outlets. In the third variety if we have a complete closure of the rectal pouch and no escape of gas or meconium, an operation as early as possible is indicated, and unless we can reach the culdesac very readily, here again I would advise a colostomy, and at some later date, an attempt to bring the rectum down to the proctodeum or sphincter muscle. In the cases which I am glad to say we usually see, there is a small opening somewhere along the perineal raphae or into the vagina, allowing the meconium and gas to escape. These of course are the most favorable conditions that we have to deal with, and are usually able to go directly thru the proctodeum without injuring the sphincter muscle which is usually present, and by drawing down the mucous membrane, and attaching it to the skin, we are able to close the fistulous tract and make a fairly good anus.

Surgical management of Spina Bifida cases will depend absolutely on the diagnosis of the individual case. The treatment may be and probably will be in the vast majority of cases advice to the mother as to the care of the child. We know that a large percentage of these children are classified as hopeless especially the Spina Bifidas which involve a portion of the cord and nerve filaments, or in other words upon examination we find a complete paralysis of the lower limbs and the sphincter of the bladder and rectum. These cases with such extensive involvement are classified as hopeless, as far as any surgical interference is concerned. A good many reports have appeared in the medical journals of operations done on these children, but the final results, I believe, have been bad. A child with a simple meningocele if not too wide a cleft, and the anterior wall of the vertebrae being intact give the best prognosis. I have closed three of these with fair results. Of course any operation, you will readily understand, must be done under the most perfect asepsis if you expect to get results, as this portion of the anatomy seems to bear infection very poorly. In the Spina Bifida acculta the methods of treatment suggested, are first, the injection of some aseptic or antiseptic fluid, such as sterile water or pure alcohol, injecting it as near to the fistulous tract or cord as possible. Second,

if no results are obtained from this procedure, then a clean dissection of the bands or tract may be attempted.

In this review I have quoted freely from Ball's text book on Rectal Surgery, Johnson's surgical diagnosis and Church and Peterson's text on nervous diseases.

211 First National Bldg.

Discussion

Dr. J. H. Laws, Broken Arrow: I would like to make some notations on this as a general practitioner. It has been suggested that an imperforate rectum occurred about once in 2,000 cases, so that even a general practitioner may pass through practically a lifetime of practice and never see one of those cases. I have seen about three cases. None of them were the extreme cases the Doctor speaks of; just slight membrane there, due to the enfolding of the epiblast with the endoblast where they meet, and just only a small membrane left. That was perforated. Two of the children I have been able to follow to the present time. If there had been any stricture of the rectum in the one, it has not been reported.

Now, as to Spina Bifida I don't know whether I understood the essayist right, or whether they very commonly, or most of the cases, give rise to symptoms, but one of the large clinics of the country, I noticed in reading their X-ray plates of Spina Bifida occulta, it seemed to me a common trouble without any symptoms; and as to the dimple, while that is true in many cases, I don't believe that we can entirely be guided by that.

Now, as to the parent, another thing I might mention is this, and it may be of some interest to the general practitioner, the meningocele that occurs, as Dr. Reed spoke of, at the medulla, I believe from the number of cases that occur in practice that is not nearly so common as the lumbar or sacral form of it. I will say the mortality of the cases that I have seen has been 100 per cent. But of the occipital region, all that I can call to mind now distinctly are two cases; one I don't know what came of it, as the family left soon after delivery of the child. The matter drifted along; I just merely spoke to the family about an operation, that the mortality was extremely high. A few months later I was very much surprised to see that the meningocele had all gone, and at present while there is an evidence of what happened there, while there is a fibrous union, at least enough to be seen there. When it comes to the lumbar or sacral regions, there is where the practitioner loses most of his cases. I might say that the mortality as reported by Rheimboid is very heavy, 75 per cent of the cases. Of course, in the country we have difficulty in the matter of getting patients to seek surgical relief early.

But about the essayist's one point we could take very well, that here we have to get an anatomical reason for the formation of diverticulum, on the right side which gives symptoms of course, very much like appendicitis. All together, we have to have, in other words, an actual anatomical reason or cause for it.

Dr. W. M. Taylor, Oklahoma City: In so far as the embryology is concerned and clinically I have just about a dozen words. I have been confused in the classification of Spina Bifida clinically. This is Dr. Holt's classification; if we have fluid within the membrane to produce a forward protrusion of the membrane posteriorly we have one form, if it is in the cord we have another form, if it is in front of the cord the whole of that cord is pushed back and the nerve elements protrude, and we get other symptoms with this condition; we find our Spina Bifida occulta. I believe the majority of us have a conception of that as being that of a post-natal difficulty, or perhaps in time more like acidosis difficulty, while according to Hollis, it is absence of the interior portion of the vertebra, and we get a protrusion into the or into the abdomen with resulting symptoms, and that is spina bifida occulta. That is not the definition as quoted by Dr. Will. He doesn't give that definition, but that is all right.

Dr. Will, Closing: Dr. Reed didn't say just exactly what formed when these arches were formed. Of course the neural and dural tract or canals are formed at the same time, and a great many authors claim that you have this condition; you have a case of hydrosepsis, or if you do away with your tumor forms in your spina bifida, you are bound to have hydrosepsis. I don't know much about that. In fact, I don't know that I have ever seen it. I have seen where we have spina bifida with those conditions, or in operations we have a hydrosepsis following it.

The treatment which the Doctor has discussed of these cases, I think he brought it out very thoroughly, the cases of spina bifida. As Dr. Reed emphasised, there are very few cases of it but what the problems are very very bad. There is no question about it. The cases I report, or saw and operated, were simple clinically, and purely a meningocele sticking out of the hernial sack of membrane, cord intact. There are very few of these cases you see, and I hope you never see any of them in practice, because there is so very little you can do, and the only thing I tried to tell you was the care of it while the child lived. Strange to say, some of these children do live, especially if they don't die of infection.

I remember several years ago I saw a boy who had grown to be fifteen years of age, had this immense tumor, and he was paralyzed,

but he was still living, and as luck would have it, luck for him, he developed infection and developed influenza, on his back quite a while, and the infection, I think, induced meningitis and he died.

The spina bifida occulta; Dr. Taylor mentioned this once before, but I have been unable to find it anywhere outside of Holt. Spina bifida occulta, as we understand it, is simply a lack of union or defect low down in the canal, and not, as I understood you to say, Dr. Taylor, a lack of union, or loss of the anterior portion of the canal.

Dr. Taylor: Protrusion of the membrane within the abdominal cavity, as the case might be.

Dr. Will: I mentioned the fact if we have a lack of union or rather loss of the anterior portion of that canal, we have what they call rachischisis, which means a lack of union in the canal. Those are the cases where there is an entire lack of bony structure. I imagine we could have spina bifida with that. The spina occulta as we see them, and as the books mention them, all of us know that very few know enough about them. As Dr. Reed says, a great many of the cases, or he says a great majority, but I hope that is not so, there is a protrusion in all children and so on. It is the ones that we see that are the ones usually with or some trouble with the bladder, not of the rectum.

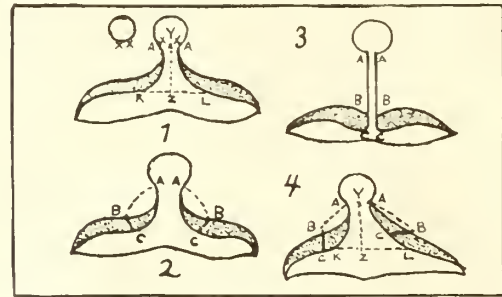
CONGENITAL DEFORMITIES OF THE MOUTH AND FACE*

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The subject of congenital facial deformities is time old, but it has only been within the era of modern surgery that anything like definite operative procedures for its correction have been advanced. For over thirty years the literature has been full of new methods, new procedures, and new ideas, but it has only been within the last decade or so that definite methods which should supersede all others have evolved themselves. Were these methods made standard, it would do much to erase the difficulty which has always been uppermost in the minds of the average surgeon, making this branch of surgery almost a terror to him.

A word as to the etiology. We almost might say there is no etiology, although it has been definitely shown, through the researches of Brophy and others, that heredity, coupled with malnutrition, are the only outstanding factors of note. We all know of many instances where two or more members of the same family have been afflicted with defective lips, palates, or both. Brophy traces many

interesting genealogies, and shows that the fundamental principle of Mendel's law holds true in these cases. That malnutrition is an



unquestioned factor is evident, as we find the majority of these cases in the poor and undernourished. Of the many other theories, such as the question of supernumerary teeth and the question of the interposition of parts, I will merely mention but to state that they have no basis of fact.

In my own practice, I have two distinctive hereditary instances—one a mother with a hare lip whose only baby had a complete single cleft of the lip and palate. The second was that of a father with a deep fissure in the upper lip, and whose first child had a very great defect and died early in life with pneumonia. His second child, which I operated at the recent meeting of the College of Surgeons, had both a double lip and palate.

The time when to operate is one of the great factors of contention in these cases. In general there are two great schools. One follows the footsteps of Brophy and Blair, who advocate the earliest possible moment to operate, even going so far as to say it is best to operate within the first forty-eight hours of life if possible. The second, of which Berry of England and most of the Continental surgeons



are advocates, is to delay the palate operation until the 18th month to the third year.

I believe it is necessary to take up the consideration of the lip and palate as two entirely separate entities. The correction of the lip, I believe, should be undertaken as early as possible, even within the first forty-eight hours of life, provided, of course, that the child is a reasonable risk, as surely the slight trauma of the repair of the lip with a light anesthesia, which is unusually well



tolerated in infants, is nothing like as strenuous or shocking as birth. The lip at that time is easier corrected, the parts more readily grow back to their normal, the skin scar will be less, and the baby will have the power of suction which is so necessary to maintain its nourishment. It can be put to the breast almost immediately. Outside of these considerations, a most important aid to the surgeon is accomplished at this time, especially in alveolar clefts, as lip pressure is the most outstanding single factor in bringing together the alveolar ridge and palate. The three follow-



ing illustrations taken from an article by Berry of London show this most conclusively.

As to the method of lip correction, there have been many intricate mathematical pro-

cedures evolved for the making of a perfect, scar-free, smooth, thick, pliable lip, but I believe that the one outstanding operation is the Rose-Thompson operation. In order to have a perfect lip, the nasal opening should have the same round contour as the normal nasal opening, the ala should be free and on a line with its fellow on the opposite side, the lip should be of full thickness and not adherent to the mucus membrane on the inside of the mouth, the vermillion border should meet accurately, and the lip should have its normal bowlike curve. Thompson makes use of a compass with sharp points, so as to accurately measure distances. This, I believe to be a very necessary adjunct to lip surgery.

I use the Thompson operation, and operate as early in infancy as possible. As is shown in the following illustrations taken from the Thompson article, the lip is first entirely freed, undercutting well up underneath the ala of the nose. The normal lip length is measured as in AB. One end of the compass is then placed at the margin of the nostril and the distance measured to the edge of the vermillion border, and a small nick is made at this place. The same procedure is performed on the other side. The depth of the red lip is then measured on both sides. This depth should be a little greater than normal, allowing for shrinkage. With the point of a



thin cataract knife the proposed incisions are then outlined. Small spring clamps are then placed on the lip margins on either side to catch the labial artery. With a clean stroke of the thin blade, the lip is then denuded. A deep silkworm gut stitch is taken from within outward, including all the thickness of the lip except the very skin. This stitch should be placed as high posteriorly as possible. The knot is tied on the inside, and care should then be taken to see that the nostrils are in absolute alignment and that the opening is not

too small. A second stitch is taken in the same manner, 1-4 inch below the first, and tied, the ends being left long. With fine interrupted dermal suture, the skin of the lip is then accurately approximated—being very careful that no tension is put on these sutures. Great care should be exercised that the margins of the nasal opening be on a line, that the nasal opening be not made too small, and that the vermillion border should meet accurately.

The repair of the palate presents itself in an entirely different aspect. In the main, palate operations are divided into three great classes—1, the time honored flap splitting operation of von Laghenbeck; 2, the Brophy-Blair methods; and 3, the flap reversing methods of Lane. The method of choice depends much upon the time we operate. Provided we deem it advisable not to operate early, then I believe the operation should be deferred until just before the child commences to speak—approximately the second year of life. At that time, the flap-splitting operation of von

that the flap-splitting operation later becomes very easy. The time for this procedure is as early as possible, but always before the first three months. I do not believe that the Blair-Brophy operation is ever indicated after the third month.

The objections to the Blair operation, alleging shock, destruction of teeth, and perforation of the floor of the orbit, I do not believe to be justifiable. The shock is not great, the floor of the orbit is only perforated by carelessness and a slight perforation does no harm, and Blair and Brophy both show that with care, there is no great destruction of the permanent teeth buds. When we consider the terrific mortality from pneumonia during the first year of life of these cases with large clefts, I can see no argument to its disadvantage.



Laghenbeck, or a modification of the same, is unquestionably the operation of choice. We select this time, first because the longer we delay, the narrower becomes the cleft; second, because the tissues are firmer and the blood supply better, leaving less danger of sloughing and infection; third, because it is still before the voice of the child has become impaired. I believe that all cases of single clefts, without too wide an opening, should be operated at this time, and that the early operation should be limited to those cases of wide double clefts with complete separation of the pre-maxilla, and to those cases which have a tendency to too much food regurgitation. It has been my custom to select for early treatment only those cases with very wide separation, and then to do the Blair operation. I believe that even though we can not force the hard palate into absolute approximation, we can narrow it so



It has been my custom to use a Hagadorn needle, number 20 silver wire, and very small plates, and to use just sufficient tension to bring together the hard palate. If this be impossible, I do not force things, so as to be certain to avoid sloughing. When the lip is repaired and the pre-maxilla in place, even though the hard palate is not in absolute contact, we have made a very wide cleft into a very narrow one. The tendency of this cleft, with the restored lip pressure, is to become ever narrower, making the flap-splitting operation at two years, a relatively simple matter.

Many modifications of the original flap-splitting operation of von Laghenbeck have been made, but I believe the simpler the procedure in these cases, the better. With the child in the exaggerated Rose position, the marginal edges of the mucus membrane are split with a very sharp thin knife. With a Brophy or Bartlett elevator, the flap is freely elevated, taking care not to tear into the palatine artery. The soft palate is split well to the tip of the uvula. It is usually not neces-

sary to make lateral incisions, as with care, we are able to mobilize the flap sufficiently so as to avoid any question of tension. The greatest care should be taken to mobilize the flap well at the junction of the hard and soft palate, because muscle traction at this point is greatest. With the split uvula pulled well backwards, we then insert a stitch of fine chromic, which includes a good sized bite of the muscle, but includes only the mucus membrane on the nasal side, and is tied on the nasal side. A row of interrupted fine chromic sutures are placed in like manner, knots being tied on the nasal side until the tip of the uvula is reached. This last suture is left long. I then commence from behind forward, using fine interrupted dermal sutures until the hard palate is reached. Then a continuous row of mattress sutures are placed so as to evert the mucus edges and give as great a contact as possible. I try to close the hard palate at one operation. If this be impossible, one of the flap reversing types may later be done, as I believe that the Lane operation is only applicable in closing small openings of the hard palate which we have been unable to close in any other manner. The mouth and nose should be kept thoroughly clean, and the sutures removed on the tenth or twelfth day.

Discussion.

Dr. I. B. Oldham, Muskogee: Dr. von Wedel has so thoroughly covered all the phases of this subject that I feel hardly able to add anything in regard to the discussion. However there are a few points. One is that of etiology. In olden times it was believed that monstrosities were caused by some sins of the father, etc.

The next question comes, why do we do these operations? What are they for? The first thing is to aid the child's speech and to masticate the child's food. As to the time of operation I think the closer to foetal life the more help we have in carrying out our work. The danger is slight. If the sutures are properly applied it very seldom results in the death of a child. We have less resistance in closing the cleft, and right at this time I wish to emphasize the point of using tension on the sutures. That should be avoided by thoroughly relieving that tension before the sutures are applied. As to the late operation where we have cleft and deformity of the septum it is always best to straighten the septum up. I disagree with the doctor in regard to the lip operation. I believe early is all right but I think the cleft should be operated before the lip. If we should not get a perfect union we would still have a better opening for a second operation. None of us intend doing a second operation but lots of times we have to do so. I think the lip should not be repaired at the same time the cleft.

Dr. von Wedel: I believe I have nothing further to say. I thank you.

ADVENTURES IN DIAGNOSIS*

BENJAMIN H. BROWN
Muskogee, Okla.

1. On July 2, 1919, a young man of 19, after feeling physically below par for a week or more, developed a severe headache and nausea. He vomited repeatedly during the night, and the next morning complained of stiffness of the muscles. Examination on the evening of July 2, showed a well developed and well nourished man moaning with headache. The head was retracted, knee jerks lively, and Kernig's positive. The pulse was 60; temperature 99.5°, white blood count, 14,700. The urine was negative. By lumbar puncture 30 cc. of bloody fluid was obtained under high pressure and 30 cc. of antimenigitis serum injected. The cerebro-spinal fluid showed no organism and no cells not accounted for by the presence of blood. Lumbar punctures were also done on July 4, and 7, fluid obtained grossly and microscopically identical with that of the first puncture, and antimenigitis serum introduced through the needle.

A tentative diagnosis was made of tubercular meningitis. Notwithstanding this the patient's condition steadily improved. His temperature reached 101.5° (the maximum) on the 7th, 8th, and 9th, although his other symptoms were alleviated, fell to a hundred on the three following days and then became normal. On July 12 he was considered able to undertake the journey to his home in the state of Wyoming. Under date of July 22, 1919, his father wrote me that his son was about well, and that he was driving all around the country in his car. Nothing further has been heard from him.

II. In February, 1920, Dr. H. A. Scott of Muskogee presented a boy of seven before the Muskogee County Medical Society. The patient gave a history of influenza about 6 weeks previously, since which time he had suffered from nocturnal insomnia. He habitually laid awake until the early hours of the morning, finally falling into a sound sleep lasting for several hours. The child was well nourished and strong, showing no abnormality on physical examination. A year after the presentation of this patient Dr. Scott reported that the perversion of the sleeping habits still persisted and that the child showed changes in mentality and disposition.

III. For a few days preceding Feb. 21, 1920, a boy of 10 had a degree or two of fever without any specific complaint of pain or discomfort. On the date above mentioned a general

physical examination was negative. The pulse was 80, temperature 100.5°, and the urine normal. The white blood count was 8,000 and the smear negative for malaria. On Feb. 27 the condition was about the same as at the first. The patient was then lost sight of until May 6, 1920. One or more weeks after my last preceding visit he had developed nocturnal insomnia with much active movement, tossing about in bed, and intense mental activity, lasting most of or all of the night. In the early morning the patient would fall asleep and sleep soundly for from 6 to 10 hours. The insomnia had been variable and was to a large extent uninfluenced by drugs or treatment. Two physicians had made a diagnosis of chorea, the tonsils being considered the source of infection. They were removed on May 10.

This patient remained under my observation from May 6 to July 12, 1920. At no time were any choreiform movements observed. During the day when awake his actions were normal; at night he showed an intense restlessness, kicking and thrashing about, but his movements seemed always purposeful. The physical and laboratory findings were negative. The symptoms remained unchanged in degree and quality. Late information is to the effect that there is still no improvement in his condition.

IV. Beginning Dec. 18, 1919, a boy of six years was ill for a few days with what appeared to be a typical attack of influenza. Feb. 20, 1920, he had a recurrence also lasting a few days. Two weeks after an apparently complete recovery from the last attack he remained awake all night. From then until seen by the writer on July 21, 1920, he lay awake until from 3 to 6 A. M., talking and whistling, flouncing, twisting, getting up and walking about and screaming out. When finally he fell asleep he would sleep soundly for 8 to 10 hours. For a time he developed phobias. He was afraid of a car or anything that made a noise. He had developed a habit of puffing or blowing which continued.

The boy was well nourished and normal in appearance and a general examination was negative. The condition described above still prevailed when he was last seen by me Oct. 20, 1920, no plan of treatment seeming to have effected any change. Shortly thereafter he was taken to a sanatorium where he was treated by the strong arm method, spanked if he refused to lie quietly in bed and otherwise subjected to strict discipline. His mother reports the effect of this treatment very happy. He sleeps of nights, has lost his habit tics, and is in school and making good progress in his studies. Whether this improvement is a result of the treatment or a co-incidence is a matter for doubt.

Early in 1920 in two excellent articles Barker, Cross and Irwin reported 8 cases of epidemic encephalitis, all non-fatal, which had been subjected to a thorough study and analysis.¹ In their conclusions they stress the fact that the disease is essentially irregular and atypical in its course, and often wrongly diagnosed. This must of necessity be from the character

1. On the Epidemic Acute and Subacute Non-suppurative Inflammations of the Nervous System Prevalent in the United States in 1918-1919. Encephalitis; Encephalomyelitis; Polyneuritis; and Meningo-encephalo-myeloneuritis. American Journal of the Med. Sciences, Feb. & Mch., 1920.

of the pathology, any part of the nervous system, central or peripheral, being subject to attack. Dunn and Heagy² more recently in reporting 15 personal cases and 100 gleaned from the literature further emphasize this point and affirm that epidemic encephalitis is being repeatedly diagnosed as poliomyelitis, botulism, brain abscess, cerebral hemorrhage, thrombosis, embolism, meningitis, acute paralysis agitans, etc. Shall we add to this list hysteria, neurasthenia, and other functional nervous diseases? Strecker and Marsh³ state that clinicians recognize at least 10 varieties of epidemic encephalitis: (1) poli-encephalitic; (2) lethargic; (3) Parkinsonian; (4) cataleptic or catatonic; (5) meningitic; (6) cerebral; (7) polyneuritic; (8) myelitic; (9) myoclonic; and (10) psychotic.

In summarizing the most important phenomena Barker et al state that the *onset* may be sudden or gradual, and with or without such prodromata as asthenia, lassitude, headache and vomiting.

2. Epidemic Encephalitis: Including a Review of 115 American Cases, Am. Jour. of Med. Sciences, Oct. 1920.
3. A Case of Epidemic Encephalitis with Unusual Features, Jour. Am. Med. Assn., March 19, 1921.

Among *general symptoms* drowsiness may be present in any degree or altogether absent, or the patient may be drowsy by day and complain of insomnia and restlessness at night. Mental depression, delirium, headache and vomiting are common. Fever is usually present in a moderate degree at some time during the disease.

The most constant and characteristic *focal symptoms* are due to eye palsies such as ptosis and strabismus. But almost any type of paralysis, flaccid or spastic, may be met with, as well as spasms due to irritation. The disease may closely simulate meningitis, with retraction, muscular spasticity and a positive Kernig's. In the latter type our only means of early differentiation is by examination of the cerebrospinal fluid. This in epidemic encephalitis is clear and free from micro-organisms. It may or may not be under increased pressure. In the majority of instances there is a positive globulin reaction and an in-

crease in the cell count. Among the cases of Barker and his colleagues was one with a hemorrhagic spinal fluid, and they remark in passing, "In more instances than accidental injury to a small vessel will apparently account for, a bloody fluid is obtained on lumbar puncture in patients suspected to be suffering with the disease."

There is usually a slight to moderate leucocytosis.

In the opinion of the authors last quoted a positive globulin reaction and a small mononuclear count of from 10 to 100 in a cerebrospinal fluid which shows a negative Wassermann and bacteriological examination is strongly corroborative where there is reason to suspect epidemic encephalitis.

(It will be noted, that in my first case reported above the cerebrospinal fluid was repeatedly hemorrhagic.)

November last Happ and Blackfan⁴ reported 6 cases of insomnia following acute epidemic encephalitis in children. The first patient of this series, a boy of 4, was seen April 23, 1920. Apparently he was perfectly normal up to the night of the previous January 16, when he was unable to sleep, the nocturnal wakefulness continuing up to the date he was first seen by the authors. "The child would stay awake all night, spending the time in constant activity, talking, playing, singing, whistling, etc. Towards morning he would go to sleep and sleep a variable length of time, sometimes all day, sometimes only an hour or so during the entire 24 hours. The usual means to combat insomnia had no effect whatever." The cerebro-spinal fluid was normal. The authors were puzzled as to the diagnosis, although the abnormality of the sleeping habits aroused their suspicions as to epidemic encephalitis. Later a study of 5 other children with nocturnal insomnia in which the diagnosis of encephalitis was confirmed by general and focal symptoms (fever, delirium, crossed eyes, etc.) and laboratory

4. *Insomnia Following Acute Epidemic (Lethargic) Encephalitis in Children*, Jour. Am. Med. Assn. Nov. 13, 1920.

findings reassured them as to their opinion in the first case.

The children whose histories I have abstracted above were considered to be suffering from psychasthenia. This paper of Happ and Blackfan was the first in the literature coming under my observation that suggested that a reconsideration of my diagnosis might be advisable. Since then, however, and since deciding on the theme for my present paper there has been an eruption of reports and discussions of similar manifestations.

Thus Leahy and Sands⁵ report from the clinic of Bellevue Hospital six cases which had

been referred to them for the relief of sequelae of epidemic encephalitis. They concluded from their study of these and other cases that instead of the complete recovery that was formerly expected many of these patients are left with one or more complications resembling practically every neurological disorder. What is of especial interest to us is that five of these six children, in addition to other post-encephalitic symptoms, showed varying degrees of nocturnal insomnia.

Ruetinmeyer⁶ reports 8 cases in which children, following an acute fever (influenza or epidemic encephalitis?), were unable to sleep of nights until 4 or 5 A. M. and two other

5. *Mental Disorders in Children Following Epidemic Encephalitis*, Jour. Am. Med. Assn., Feb. 5, 1921.

6. *Postencephalitic Insomnia*; Schweizerische Med. Wochenschr., Jan. 6, 1921. Abstract J. A. M. A. Feb. 26, 1921.

cases in which this type of insomnia was a feature of epidemic encephalitis. He states that Pfaunder has reported a similar series.

In a brief article in the Journal of the American Medical Association⁷ other similar reports are mentioned, among them that of Hufstadt,⁸ whose series is said to embrace 21 cases in children from 2 to 13 years of age.

Up to the time of reading the paper by Happ and Blackfan I had no reason to doubt that the three children coming under my observation were suffering from functional nervous disorders. I had not thought of spinal puncture as being advisable, and such was evidently the opinion of other consultants. Even now I prefer to let others draw the conclusions and announce the moral (if any) of this paper.

However, it may be well to remark that nowhere is history more prone to repeat itself than in epidemiology. Encephalitis is by no means a recent or hitherto unknown disease, epidemics having been repeatedly reported, even as far back as 1718. But we still know all too little about it. As one writer sagely remarks, "The subject merits special investigation."

7. *Current Comment*, April 2, 1921.

8. *Muenchener Med. Wochenschr.* 67, 1400, 1921.

Discussion

Dr. Horace Reed, Oklahoma City: Mr. Chairman, ladies and gentlemen. Dr. Will has very ably gone into the discussion of the embryological development of the child in certain stages with particular reference to the rectum. He has also touched upon the central nervous system and the defects which may take place in the course of its development. I shall limit my remarks to the defects that take place in the nervous system.

We must remember that the human embryo in developing goes through all the stages from the simplest form of life to the most complex.

At the same time all the various structures go through the various forms from the most simple to the most complex. There are epochs, chronologically speaking, in this development.

Now, the nervous system, corresponding to the simplest forms of life in the very beginning when it is first recognized, forms a groove, or thickening, which later becomes a groove on the dorsal aspect of the fetus. This groove develops finally into a canal, but this canal is formed by the coalescing of the arches, the arches, bringing up from either side of this groove coalesce and thus form the neural canal.

Now, the arches do not coalesce at the same time all along, but they begin at certain points to coalesce very much earlier than at other points; rather they begin at two points and progress from those points forward and backward until coalescence becomes complete all along. These points are in the mid dorsal region, posteriorly and somewhere midway between the frontal and occipital region in the anterior portion. So, we have three points then where the coalescence take place latest. These three points are in the extreme front, in the middle portion between the dorsal and the occipital, and in the sacro-coccygeal region.

Whenever a person is engaged in a hazardous occupation along with other persons in the same occupation, he who remains in that occupation the longest is more apt to happen to some accident, is he not, everything else being equal? If a person works two years in that occupation, and another person works one year in that same occupation, both being constituted equally and having equal chances of accidents, the one is twice as apt to have an accident as the other. That is accepted, isn't it?

Now then, whenever a coalescence, or a fusion in the structure, embryologically speaking, is late in taking place, accidents may happen which prevent it. And so we find it in the nervous system. In those points where the coalescence take place latest, we find these defects most often. True we can find them anywhere. We find them anywhere along the mid line from the glabella to the coccyx or to the sacrum. We find them most frequently in the sacral and coccygeal regions, and I will explain why we don't find any in the coccygeal region in advanced form a little later. The reason is obvious. When we find them in the frontal region, what do we have? We have these conditions, some of them may be in the form of a tumor, as the Doctor has shown, and some may be very trivial defects. We speak of meningocele. As a matter of fact what is more common is a thin sack with transparent fluid in it, covered by a very thin skin. When we come to the final analysis of that sack, we will find that it contains neurological elements in

the membrane. This applies more particularly to the occipital region.

As regards operation, you may succeed in removing the tumor, but you will not succeed in curing your patient of the paralysis which it had when it was born. You may even make it worse, because you will most likely remove certain of those neurological elements which are essential.

He also mentioned the tumor which occurs in the sacral region. Now, let us remember that in the very early stages of development, the spinal cord reaches to the end of the coccyx. That is before the arches have completely fused, or rather about that time. The arches close over at the very latest point, chronologically speaking, in the coccygeal and sacral regions. Since they have been so long in making coalescence they have had all this period in which something might take place preventing the proper coalescence. Therefore, you get your defects in that region.

Now, why do you not have meningocele in that region if that is the case? Simply for this reason: In adult life the spinal cord proper has retracted until it reaches not lower than the second lumbar vertebra. The dura only reaches to about the second sacral segment. Both of them formerly reached to the end of the spinal column. You can't have a meningocele protrusion without the meninges, can you? In the very early life it was there; it has disappeared. But you have the injury or defect in the nerve which is still there. What are post-natal dimples? They are nothing more than evidence of defects in the closure of that canal. Look at the children as they are born, and I believe that in the majority you will find over the sacrum, dimples, scars and other evidences of defects. In the majority of instances, if they occur below the third, and particularly below the third segment of the sacrum probably nothing has happened. The amount of enervation, or disturbance of enervation amounts to so little as to be insignificant. But if it occurs in the second or third segment of the sacrum, there will likely be signs of faulty enervation. If the coalescence has reached no farther than the second sacral segment you do not have the actual tumor any more, but you have the scar remaining, or have the defect in the arches remaining probably, and what else do you have? You may have club feet, you may have imperforate vagina, you may have imperforate anus. Enuresis is one of the distressing symptoms which results from these lesions.

Now, practically speaking, what does this all mean? So far as treatment of Enuresis is concerned, there is not very much you can do for it, but we should recognize the true condition so as not to make treatment absolutely

fruitless along lines which will only meet with discouragement.

About twenty years ago I saw a child 10 or 11 years of age who had enuresis. He had gone to every new doctor that came to that town and each had failed. I was asked to see him because I was a new doctor there. I didn't recognize the true nature of the condition. Later I stumbled on to what the cause might be and went and investigated and found it was true. He had the sacral defect as just described. When you have these conditions, you can only give prognosis and direct the management so that the patient will not be bothered by unnecessary treatment. They may improve if you will inject about 20 C.C. of normal salt solution slowly into the sacral canal. The child should have reached about 10 years of age so that it may co-operate with you in this treatment.

I merely bring this before you for the purpose of asking you to look up these conditions and, recognizing them, give your prognosis accordingly, and not torture these patients with all the instruments by which they are ordinarily treated.

PROCEEDINGS OF UNIVERSITY HOSPITAL CLINICAL SOCIETY

January 6, 1922

Dr. Fishman: *A Case of Spinal Cord Tumor.*

This patient, a woman of 48 years of age, began to complain of pain in the left chest and under the left shoulder blade about two years ago. This was continuous, severe, and rather constant, without any further developments that she knew of until about a year later when she began to notice that her legs felt tight and she had to use a cane for walking. From that time on the motor symptoms began to develop rapidly so that she has been practically helpless since. She has developed a sore in the sacral region which has been discharging some purulent material. Besides the motor symptoms and the pain, she finds that she is insensitive to heat and cold, and is unable to feel her lower extremities.

As far as her past illnesses are concerned, except for the usual diseases of childhood and tonsilitis, she has had no symptoms referable to her present condition. Her personal and family history are uneventful. She has three healthy children and one died accidentally. There is no suggestion of nervous troubles in the family.

Physical Examination: Large obese woman of good mentality. Examination of the internal organs shows nothing unusual. There are no cranial nerve involvements. The upper extremities show no abnormal findings. There

is an open wound at the lower portion of the sacrum which shows a purulent discharge. Surrounding this there is an area of redness of trophic origin. The neurological examination shows further a complete spastic paralysis of both lower extremities, with deformities of the spastic type; that is, typical adduction and flexion of the legs and feet. There is also complete anesthesia to pain, touch, and temperature, as well as to muscle and joint sensation, including both lower extremities as high as the lower costal margin on both sides. Just above this level of anesthesia there is a narrow zone of hyperesthesia. There is also complete loss of sphincter control.

Comment: This is a case of progressive development of a cord lesion which began as a sensory irritation and required about a year for the development of the motor phenomena, and those symptoms of complete transverse cord involvement. The level of disturbance is precise, corresponding to about the sixth thoracic segment above which there is a narrow area of hyperesthesia.

Diagnosis: The findings are that of a double Brown-Sequard phenomenon, and because of its development is clinically that of tumor of the cord at the level of about the sixth lumbar segment.

Management is strictly surgical, and it is to be hoped that the tumor will present upon opening the meninges. Otherwise the operation should be done in two stages because many tumors subsequently appear at the exploratory site, some time after the primary operation. The ultimate result depends largely upon the actual destruction of cord tissue, although restoration of function is sometimes remarkable after apparent gross damage of the cord.

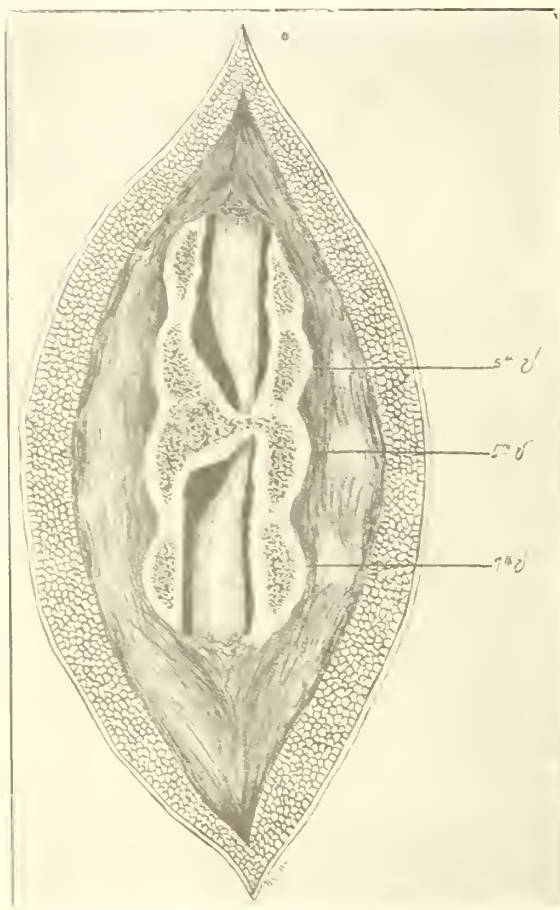
Subsequent Report on the Case of Spinal Tumor Presented at the State University Hospital Clinical Society, January 6, 1922, by Dr. C. J. Fishman.

Subsequent Report on Case Spinal Cord Tumor:

Dr. R. M. Howard operated this patient on January 23, 1922. The operation showed a bony tumor at the level of the sixth thoracic vertebra, as is shown in the sketch, with almost complete obliteration of the spinal cord. The pressure was relieved by removal of the bony tumor, and the patient's operative recovery was uneventful with union by first intention.

It is to be hoped that besides the relief of pain from which the patient has not suffered since the operation, there will be gradually an improvement in her trophic disturbances, and that the sensory disturbances will gradually come back approximately to normal. However, up to this date, Feb. 14, 1922, there has

been very little improvement except subjectively, although the patient claims to be able to feel some of the gross sensations to her lower extremities, and knows when her sphincter control needs to be attended to.



Agnes W., age 14, white, admitted to hospital December 29th, 1921.

History: Chief complaint, three weeks had pain in left ear followed in 24 hours by purulent discharge; pain has continued more or less ever since; however not so acute nor well localized to ear as in the beginning being more indefinite in character and variable in location. Sent to hospital by Doctor who thought she had involvement of the mastoid.

Previous History: Repeated attacks of earache since early childhood.

Had severe attack three years ago followed by purulent discharge; similar attacks occurred every 4 or 5 months until present attack. Has had Measles, Pertussis, Pneumonia and Influenza.

Family History: Negative.

Physical Examination: Poorly nourished and developed girl of 14 years. Drowsy and

irritable. Cries with pain when moved. Wants to be left alone.

Head and Neck: Negative with exception of slight swelling below left mastoid and extending into cervical region along course of the sterno-mastoid muscle, some rigidity of neck attributed to the inflammatory condition about superior attachment of Sterno-mastoid.

Eyes: Pupils normal in size and reaction. Ocular excursions limited to left, i. e.: An object will be followed to the left slightly past the middle line then the eyes return to the right with a jerky motion; a beginning conjugate deviation. Slight congestion of left disc.

Ears: Chronic purulent discharge from left ear, offensive in character and moderate involvement of the mastoid.

Neurological Examination: No paralysis. No atrophy. Kernig sign questionable. Patellar reflexes exaggerated on both sides. Gordon and Oppenheim present on left. Babinski absent. Sensations normal. In-coordination when attempting to touch nose with finger, more marked in left arm. Patient slightly drowsy but easily aroused. No mental disturbance. No aphasia.

Temp. 98.8. Pulse 108. Resp. 12. Nothing unusual in character of pulse or respiration. Blood pressure 110-70.

Laboratory Examination: Urine, nothing significant. Blood, H. g. 85; R.B.C. 4, 180,000. W.B.C. 37,450; N. 94. T. 2, S.L. 1, L.L. 3.

Cerebro-spinal fluid: Clear and under slight pressure. Fibrin Neg. Cell count: 160. S.L. 61, L.L. 8, N. 31. Reduces Fehlings. Colloidal Gold. Meningitis curve.

Smear from Ear: Staphylococci in large number. Few diplococci, probably micrococcus catarrhalis.

A provisional diagnosis of tubercular meningitis accompanied by an intracranial abscess of mixed infection was made.

Further examination December 30, 1921: Temp. 100.8, Pulse 128, Resp. 22.

Retinal congestion more marked on left.

Blood examination: W.B.C. 29,900, N. 91, T. 3, S.L. 1, L.L. 3.

Spinal Fluid: Clear. Cell count 107, 74 Lymph. 26 Poly's other symptoms the same.

Dec. 31st, 1921: Patient had slight chill, and temp. rose to 102.4. Pulse 120, Resp. 26. Involuntary urination.

Definite congestion of left disc, slight of right. Neurological symptoms the same with the exception of a positive Babinski on right and slight Kernig both sides.

Blood Examination: Showed a drop in W.B.C. to 11,750. This was checked by Dr. Rigby who found 32,700.

Spinal Fluid: Does not reduce Fehlings. Cell count 45, 88 Lymph. 12 Poly's. No organisms found in fluid. Negative culture.

Jan. 1, 1922: Temp. 102.8, Pulse 102, Resp. 28, Projectile vomiting. Blood 11,350.

Jan. 2, 1922: At 4 P.M. Temp. 98, Pulse 150, Resp. 12. Respirations irregular. Blood 14,650. Decided that chief symptoms were due to an intracranial abscess of Otitic origin and operation indicated. Choosing the temporo-sphenoidal region, as the region of election. Dr. Long explored both the temporal and sphenoidal lobes without result. I then hurriedly opened the mastoid and exposed the Dura which pulsated and appeared normal and was not opened. No pus was found in the mastoid. Operation was considered a failure and patient returned to room with a grave prognosis. Patient died the following morning at 5 A. M. Post Mortem: Large abscesses of left cerebellar lobe having its origin in left middle ear and accompanied with a limited basilar meningitis. Culture of pus from abscess was *B. coli*. The purulent tract from middle ear to abscess was in posterior fossa just above mastoid exploration.

The treatment of this case other than operative has been of no significance. The chief points in this case as I see them are as follows:

1. The danger attending middle ear infections. The majority of Intra-cranial abscesses are of Otitic origin. There may be no ear symptoms other than a chronic discharge. The path of infection is usually through the labyrinth, either directly through the internal Auditory meatus or through the Aqueduct Vestibule or Aqueductus cochlae.

2. The early diagnosis of Meningeal and brain involvement. The symptoms resulting from intra-cranial involvement are dependent upon an increase in intra-cranial pressure and to the bacteria and their toxins, together with a disintegration of nerve tissue. The most constant and significant symptom is increased intra-cranial pressure with a disintegration of nerve tissue. Head pain localized in the temporal region rather than a severe pain in ear. Localization of pain may change to frontal or occipital regions. The pain in Brain abscesses is usually more severe early than late in the disease. Another early symptom of increased intra-cranial pressure is a swelling of the Optic papilla and a blurring of the margin of the optic disc. This should not be confounded with choked disc found later. If there has been a direct bacterial invasion of the central nervous system our earliest sign will be the disappearance of Carbohydrates from the cerebro-spinal fluid. This condition was not present upon first examination but found to exist on the second day, indicating a secondary

involvement. The exception to this is in T.B. meningitis where the carbohydrates remain until late in the disease.

The neuro muscular symptoms may have been due to an abscess or meningitis. What deductions are to be made from symptoms and laboratory findings. The relative high lymphocytosis in spinal fluid had no significance.

3. When and where should we operate. All cases of Intra-cranial abscess should be operated as soon as a diagnosis can be made; even late in the disease. The operation should be done through the mastoid region when the infection is from the middle ear.

Dr. J. F. Kuhn: *Case of Suture of the Femoral Artery.*

J. W., colored, age 26, admitted University Hospital Nov. 16, 1921. Seven weeks previously had wounded himself by the accidental discharge of a 32 caliber automatic pistol, the bullet entering the inner aspect of the upper left thigh and ranging downwards. Swelling occurred rapidly; there was a very small amount of bleeding. The thigh was opened by a local physician and a tube inserted getting very little drainage. This wound closed in about one week, the swelling remaining. A week after this more swelling was noticeable, at the same time a throbbing pain in the thigh. This throbbing was visible to the patient. He was having fever, was growing progressively weaker. Three weeks later, and one week before admission to this hospital his doctor decided to lance the thigh again. Upon doing so, there appeared some very dark blood clots, quickly followed by free spurting hemorrhage. This hemorrhage was checked by an improvised tourniquette made by twisting and knotting a towel around the upper thigh. This was kept in place several days after which he was sent to this hospital.

He was observed here for two days with the following local signs: The upper thigh was markedly swollen and upon deep palpation there seemed to be some slight expansile pulsation. There was a distinct bruit heard over the femoral artery.

Blood count: On admission W. B. C. 16950 neutrophiles 71%
11-18-21 W.B.C. 15650 neutrophiles 88%
R.B.C. 1,660,000

His temperature was 102 degrees, pulse 120. No pulsation could be felt in the vessels in the lower leg, which was oedematous and cold, although capillary circulation was present. Diagnosis of a wound of the femoral vein or artery with hemaoma and continued slow hemorrhage.

On the morning of Nov. 18, 1921, the patient was taken to the operating room for further examination and it was found that during the

night much more hemorrhage had increased the swelling and the patient was noticeably weaker. Under very light ether an incision was made through the skin and superficial tissues; then blunt dissection down to an enormous semi-organized blood clot. This was hurriedly scooped out, a double handful at a time. As soon as the blood clot was cleared away a diagonal slit in the femoral artery was uncovered and this accounted for the free hemorrhage, it having perhaps been started anew by the examination of the night previously.

The patient's condition at this time was extremely critical. He was in extreme shock, practically pulseless, respiration very shallow. The artery was hurriedly sutured using fine linen and placing the sutures so as to utilize the flap of artery, which had been slit up, as a valve. Two other very small slits were closed in similar manner. The cavity was packed with sterile gauze and the wound left unsutured. Patient was wrapped in warm blankets and kept on the operating table until it was thought safe to return him to the room. He was in such shock that his skin was almost constantly leaking; this was controlled by free use of pituitary liquid. He was given large quantities of liquid by mouth when conscious. The whole leg was kept warmly bandaged and elevated. Pulsation subsequently returned to the posterior tibial and dorsalis pedis arteries. On the third morning wound was dressed and partially repacked; complete replacement of the large packing requiring several days. Patient's recovery has been slow owing to enormous cavity, but no interruption to this recovery has occurred. He was kept in bed for 6 weeks and is now up in wheel chair.

This case is another illustration of the extremely dangerous character of upper thigh injuries and the surgery of this region.

PROCEEDINGS OF ST. ANTHONY'S HOSPITAL CLINICAL SOCIETY

January 24, 1922.

Dr. A. B. Chase: *Clinic of Rheumatic Hearts
With Mitral Involvement.*

Both of these patients have mitral regurgitation and mitral stenosis, irregular pulse, pulse rate in each being about seventy-five. The treatment of these cases is diametrically opposed. Both cases give a history of tonsillitis and rheumatic fever.

Cardiac irregularity may be "extra" or "intra" in origin. Extra-cardiac irregularity is due to some cause which affects the sinus node and, hence, causes cardiac irregularity. In both of these cases the irregularity is intra-cardiac. The sinus node is the pace-maker of

the heart because it is the most irritable center in the heart. The ventricles also have the power of initiating impulses at the rate of approximately thirty per minute; the sinus node at the rate of approximately seventy-two per minute. The impulse starts from the sinus node, traversing the auricle and reaching the node of Tawara in the auricle, thence passing through the auriculo-ventricular bundle. This bundle divides into two branches known as the right and left bundles which supply conductively to the right and left ventricles respectively. These bundles subdivide into the plexus of Purkinje which is found in the walls of the ventricles.

If the auricle or ventricle is irritable it has the power of developing a focus of contraction which passes downward over the heart and gives a contraction independent of the impulse which comes down from the sinus node. This is known as an ectopic focus and may cause a cardiac contraction before the regular contraction is due from the impulse coming down from the sinus node, and, hence, gives what is known as a premature beat or extrasystole. This can be best illustrated by supposing that a contraction arises in the sinus node every thirty seconds. An ectopic beat may arise at fifteen seconds instead of thirty seconds. The result is that when the impulse from the sinus auricular node reaches the heart at the expected time, thirty seconds, the ventricular muscle is in the stage known as refractory or contractile and as no impulse again comes down from the sinus node until the sixty seconds is reached the heart does not beat at thirty seconds but gives a period of forty-five seconds of stand-still. In extrasystole two contractions are irregular in time, but the sum total of time elapsed is equal to that of two normal contractions (30 plus 30 equals 60, or normal, and 15 plus 45 equals 60, or extrasystole). This delayed time is known as a period of compensation.

Heart block or delayed conduction: In complete heart block no impulses from the sinus node reach the ventricle due to the impulses not passing through the auricle-ventricular (Hiss) bundle. Hence the ventricle beats from its own power to originate impulses, and as the power to originate impulses averages about thirty per minute the ventricular contractions will be about thirty per minute. Heart block may be incomplete and permit impulses to pass through the auriculo-ventricular bundle slowly or permit only part of the impulses which come from above to get through. Nature may take advantage of this in certain cardiac conditions and produce more or less heart block, or it can be accomplished by digitalis or drugs of that group.

Auricular fibrillation is a condition in which

the auricles are in a state of diastole but quivering constantly, as one writer has said, like a bunch of angle-worms. In this class of cases the impulse comes down from the sinus node to the auricles, and the auricles do not respond to the stimulus from above, but from the irregular contraction they are sending out a constant shower of impulses of varying degrees of intensity, which pass through the sinus-auricular node to the ventricles. Coming as they do, at irregular intervals, they give us contractions irregular in time. Reaching the ventricular muscle in more or less exhaustion (refractory) the contractions vary in intensity. Hence, we get the absolute arrhythmia which is characteristic of auricular fibrillation.

The electrocardiogram of a normal heart shows first a "p" wave indicating the passage of the impulse over the auricle. There is a period of approximately a tenth of a second between the "p" wave and the beginning of the "Q R S T" complex which is indicative of the passage of the impulse throughout the ventricle. In one case shown by the electrocardiogram we note the "P R" interval is .15 of a second showing delayed conduction of the auriculo-ventricular bundle, and as digitalis delays conductivity of the bundle digitalis is contra-indicated. We note that the normal interval between two impulses is twenty-two millimeters, or forty-four millimeters for two impulses. This interval holds true throughout the entire electrocardiogram. About every tenth beat we notice an absence of the "P" wave. The "Q R T" complex occurs at fourteen millimeters and the next beat occurs thirty millimeters later which indicates a ventricular extrasystole. As the primary deflection of the "QR" complex is first downward and then upward, we are assured that this is an extrasystole due to a point of irritation arising in the left ventricle near the apex. Referring to the cardiogram of another patient we find a similar condition but with this difference: the initial phase of the "Q R S" complex is upward instead of downward, which indicates an extrasystole due to a focus arising in the right ventricle near the base. Hence, by the electrocardiogram we are able to decide the location of the focus of irritability. The "Q R S" complex of an extrasystole arising in the ventricle is not like that of the normal "Q R S" complex because the impulse does not originate and pass in exactly the same way as in the normal heart.

In the following electrocardiogram two things are noted: one, the absolute irregularity of time of the "Q R S" complexes; second, the absence of a "P" wave, which are pathognomonic of auricular fibrillation. The curves which are seen between the "Q R" complexes are due to the quivering of the auricle in dia-

stole, which has already been referred to under the head of auricular fibrillation.

In our case of auricular fibrillation the treatment is digitalis sufficient to sedate the auriculo-ventricular bundle and prevent the excessive number of impulses to pass through, giving the ventricle time to steady itself in rate and sufficient time for the heart muscle to rest and prevent exhaustion.

Conclusion

Two patients presenting the same valvular lesions, the same pulse rate and irregular pulses, do not require the same treatment. Appropriate treatment, therefore, can be instituted only after complete examination of the patient. (Demonstration of the patients, electrocardiograms, and drawings).

Dr. S. R. Cunningham and Dr. A. D. Young:
Head Injury.

This young man, Mr. H. C., 28½ years of age, an oil field worker, was admitted October 29, 1921. Family history negative. Past history negative. Present illness dates from August 14, 1921, when he suffered severe injury to his head.

Physical Examination: Fairly well developed white male; good muscles except for the loss of tone and some atrophy of muscles of the right upper and lower extremities; pupils normal; tongue protrudes to the left side. There is a large cerebral hernia at the site of a cranial defect in the right parietal region. Lungs clear.

Laboratory findings: October 29. Urine negative. Blood, R. B. C. 7,000,000. W.B.C. 15,950. P. 81% L. 18%. October 31, R. B. C. 5,400,000. W.B.C. 10,900. P. 68% L. 31%. Wassermann reaction negative.

Stereoscopic X-ray you see in the rack made on admission, shows defect in the left parietal region about one inch by one and one-half inches. There is also shown a fragment about one inch square depressed and turned almost at right angles to the vault. Practically the entire right parietal bone is comminuted and linear fractures extend into the frontal and occipital bones. A very large fluctuating (not pulsating) hernia was protruding.

After consulting with Dr. A. D. Young, we decided to remove the depressed fragment and institute drainage. This we did on October 31, 1921. Although he had a rather stormy convalescence for a few weeks, he now is much improved in every particular. He is getting better use of his hand and arm and of his leg and foot. He talks much better and has gained about twenty pounds in weight.

While this young man exhibits an extensive injury to his skull it is no criterion of the extent of injury to his brain. It is unfortunate that such injuries are generally classed as

"fractures of the skull", for this directs too much attention to the cranium to the exclusion or minimizing of attention to the real injury—that of the brain. A cranial defect in itself bears no ill consequences. Depressed fragments and depressed and irregular edges of defects may produce symptoms of great variance and should have early surgical attention.

The physical effects produced by the penetrating, or through-and-through wound, the tangential or groove-like wound, and the puncture or depressed variety are: 1. A direct destructive effect upon the brain. 2. Reactionary swelling, i. e., acute cerebral oedema. 3. Hemorrhage. 4. Compound and depressed fractures. The extent of injury, barring infection that may follow all open wounds, can be determined by the mode of infliction, the appearance of the wound, the stereoscopic roentgenograms, and neurologic symptoms.

Through-and-through and tangential wounds should have immediate operation to enlarge the openings for drainage and the removal of depressed fragments or foreign bodies. Punctured and depressed fragments should be removed or elevated. Cerebral oedema should be relieved by the enlargement of existing defects or by subtemporal decompression. Cerebral hernia requires immediate enlargement of cranial and dural wounds and institution of drainage with especial care that no pressure is put upon the protruding brain.

The very large prolapse this patient suffered has entirely disappeared.

Prognosis: The cranial defects will never close except by connective tissue. Defects of any consequence in the skull, even linear ones, never ossify. I predict he will get fair use of his leg and very little use of his arm and hand. He should have no further neurological symptoms unless he should develop a chronic cerebral oedema.

Dr. A. D. Young: *Chronic Brain Injury.*

I will speak only of end results of brain injury. Sharpe ("Diagnosis and Treatment of Brain Injuries" by William Sharpe, M.D., J. B. Lippincott Co.) says "Of patients discharged as well, 67% of them were still suffering from the effects of the injury. The chief complaints were persistent headache, a change of personality of the depressed or of the excitable type, and thus emotionally unstable; early fatigue, making any prolonged physical or mental effort impossible, and thus the inability to work; lapses of memory, spells of dizziness and faintness, and even epileptiform seizures in a small percentage of them. In examining the hospital records of the patients having these post-traumatic conditions,

it was most interesting to ascertain that these were the patients,— and there were but few exceptions,— who regained consciousness gradually after several days, and remained in the hospital for a period of four weeks and longer, whose charte made frequent mention of severe headache and a low pulse rate of 60, and in some cases below 60, that is, the usual clinical signs of an increased cranial pressure." In addition there is frequently seen increased and unequal reflexes, positive Babinski, impairment of special senses, blurring of nasal margin of optic disks, disturbance of the visual field.

All these symptoms and signs may be due not only to actual trauma of brain tissue but to chronic oedema of the brain as well. The cause of the continued oedema may be due to a remaining film from the original supracortical hemorrhage, to a depressed fracture, or the persistence of the acute oedema. If the manometer shows an abnormal increase in the cerebral spinal fluid a right sub-temporal decompression should be done. If in addition there is a piece of depressed bone, this can be removed or elevated at a subsequent operation. If there is no increase of pressure, it is advisable to take care of the depressed bone as the continued irritation may cause new symptoms to develop or cause the old ones to become intensified.

In this case, admitted October 29, fever began in a few days, running from normal to 103, irregularly. Convulsions began November 14. Projectile vomiting and headache just preceding the onset of convulsions. Convulsions from seven o'clock P.M. to ten o'clock P.M. one day only. Spinal puncture at this time yielded 36 c.c. spinal fluid and the cranial wound opened with very little pressure. The fluid was cloudy with 144 cells and four plus globulin; Wassermann reaction negative. The W.B.C. was 12,050 on the day of convulsions. Polys 84%. Lymphs 15%. Aphasia and paralysis of the left arm and leg has been present since the date of injury. He entered the hospital eleven weeks after the head injury. He was unconscious one day at the time of injury and practically so four days more. One piece of bone was removed at the time of injury and one at this hospital by Dr. S. R. Cunningham. The depressed bone, which was a loose and dead fragment, was removed. Eye examination by Dr. E. S. Ferguson showed: Pupillary reaction slightly sluggish; fundi show evidence of swelling about both nerves; arteries are restricted and edges of nerves indistinct; nerve heads show some exudate, particularly on the left side.

Conclusion

Optic neuritis due to central pressure with possibility of atrophy following, as nerves are already somewhat pale.

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive the Journal should call for immediate notification of the editor, 508 Barnes Building, Muskogee, Okla.

Local news of possible interest to the medical profession, notes on removals, changes in address, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

STOP IT; IT'S UNNECESSARY, BESIDES YOU HAVE FOOLED NO ONE

The JOURNAL *positively appreciates* little items noting all activities of the doctor, his woes and joys, his successes, in fact everything about him, even unto his death, if that misfortune must be sadly reduced to written comment. BUT, We do become some riled, "hard-boiled" and adjectively inclined over the experience, the following lines describe as typical the silly practice. Our mail brings this:

Possum Hollow, Okla.,

"Dear Doctor: You may send my journal to Chi., N. Y., Rochester, (as the case may be.) Yours very truly, John Doe, M. D.

We do that, only to have notice, sometimes none, from the Postmaster, returning the Journal at our expense, with a heavy postage due attachment. We at once investigate.

We write the postmaster "You returned Dr. Doe's Journal as undeliverable, *at our expense*. That was wrong, you should have advised us on certain Form as your regulations provide." We also write the County Secretary, "Where is Dr. Doe? Chicago Postoffice has returned his Journal, undeliverable." Sometimes we even make more time-wasting, useless effort than the above indicates. We tell the printer as to Doe, "Cut him off." He does. You, along with Doe and all the others pay the bill, not much of itself, but very much when you cast up the total of such matters. We also move him around in the office considerably. Everything about it is subject to more or less error. Your Secretary hears from that. We finally locate Dr. Doe, back at Possum Hollow, returned, according to the Possum Hollow Tribune, from an extensive stay, (he was gone three weeks) to the celebrated clinics of the world, where he mastered everything intricate, new, useful and advanced in the science of medicine and surgery. We then understand that Dr. Doe left home for a few days stay and wanted the JOURNAL to know it. One minute of his time and an expensive one-cent postal card would have served the purpose. STOP IT.

WHY THE OBSOLETE QUARANTINE?

The JOURNAL is irritated by other things than that of wasted effort noted elsewhere. One of the oldest, as well as most useless practices to which an informed, modern people is given, is that surrounding the disease we have had with us since the beginning of things, and which will continue to be, though useless and unnecessary if treated with the intelligence the matter demands, but which has not been, is not now, and never will be, as long as silly prejudice, ignorance, Christian Science, Osteopathy (in part, they are getting wised up), Chiropractics and similar ilk are permitted to inject their voodooism, and general lack of understanding into the matter, and which is permitted by a tolerant attitude of our people, who in so doing fondly prate about the constitutional right of the citizen to follow his own inclinations; forgetting when they deliver that senseless, inapplicable creed, that altogether these opponents of known facts as to potency of preventive measures comprise a mere fraction, a small minority of the people, who themselves have the right to demand and expect that no privilege be permitted one, if that permission makes possible injury to the mass. Certainly disregard of the rights of the majority is all the general attitude of these people amount to. But, in this matter of smallpox, health authorities and municipalities have pointed out to them the most effi-

cacious system imaginable, if they would only exercise it. This effort is prompted by reading a McAlester newspaper dispatch, stating that entrance to the penitentiary had been denied a number of Muskogee County prisoners on the theory that they would endanger the inmates already there. What a silly commentary on our boasted advances! What a reflection on our understanding! Why should the Warden of the penitentiary, the State Commissioner of Health or anyone worry a moment over that matter? Surely every inmate has been vaccinated, or ought to have been, promptly on his delivery there. To carry the thing to its logical conclusion, everyone of them should have been promptly vaccinated by the jail physician of the county concerned, immediately upon incarceration. That would absolutely settle the matter. They or no one would need have a moments hesitancy, after they were so successfully protected, to care a figment where or when they went. No one could injure them, they could injure no one, so far as disseminating or acquiring smallpox. If there ever was a matter in which unanimity of opinion has been reached, it is this very matter. Yet the same old useless, silly, indefensible system is in vogue, as was the accepted practice when the writer came to the Indian Territory in 1882. It is not pertinent, yet significant, that then most physicians dreaded that disease. If we were Commissioner of Health of Oklahoma, probably the first order we would issue would be that requiring protective vaccination for every person under jurisdiction of the office. After that they would be permitted to go where they pleased, and anyone, those in the full flush of smallpox, would be permitted access to them, and with safety assured. Why then is all this excitement and hysteria, this lost motion and misdirected effort permitted existence as to the matter? The vaccinated person has nothing to fear, the unvaccinated should have no hearing on the matter. He should either be vaccinated or permitted, in the exercise of his rights, to contract it or not, as his God of luck saw fit.

WORKINGS OF THE STATE COMPENSATION LAW

Many inquiries come to the Journal on various phases of the Workman's Compensation Law. Two things especially seem to be sources of misunderstanding between the companies and the physicians concerned; they are the right of the companies to designate whom they will have to attend their employees and the amount of the fee to be charged. It is at once apparent to any fair minded man that some of our physicians render unreasonable bills for services rendered these men; that

they do this on the knowledge that a "corporation" must pay the bill is also apparent. The Oklahoma law on this matter presumes that in rendering these bills, the physician will bear in mind that he is to make a charge in keeping with the standard of living of his patient, his wages and all other considerations. In other words, he is not to make a bill for treating a fractured femur of the same magnitude he would make in the care of a bank president. This principle is the one most potent stumbling-block over which most of the trouble arises.

As to selecting the attendant. Whether we like it or not, it seems reasonable that these companies should, as they must pay the bill, have some little latitude as to whom they will place in charge of the employe's injuries. It is also apparent, or should be, that in many cases this discretion is not safely left with the employe. He selects a physician because he likes him personally, because he tells a good story, because of his peculiar brand of profanity or some other irrelevant matter; while the company, presumably, selects the man whom they believe to be most competent; who, by rendering skilled service will lessen the time of incapacity of the injured, get him back on the job earliest and consequently cut short the time and amount during which the company must pay compensation. We should not overlook the fact in this connection either that this payment is made, this care given the injured, whether it be due to the man's forgetfulness and carelessness, the company's or some other person in no way connected with the matter. Should an oil-field worker fall from the derrick while carelessly inattentive to the duty at hand, the company, in no way responsible for his fall, who do not want him incapacitated, but efficient, awake and able to work, must pay the bill.

Replying to some such matter arising in Carter County, Honorable Baxter Taylor, Chairman of the Industrial Commission, wrote the annexed letter, which is reproduced for the information of those concerned. It goes without saying that the rank and file of our members will meet more than half way any reasonable proposition anent this work. They should neither be imposed upon nor should the occasionally met, obstinate, unreasonable physician, who attempts to run counter to all reason in the matter, be tolerated to the extent that he do injustice to any corporation or insurance carrier.

While discussing the matter our members should also understand that the Industrial Commission has in Oklahoma City a competent surgeon to whom certain bills rendered are referred for decision as to their reasonableness.

While, naturally, he may make errors one way or the other, it is the fact that they are very few and little complaint has arisen on that score. It is suggested, to make the way of everyone easier, that statements for services rendered should be full and ample, setting forth the conditions met, the service rendered, and, in those cases where an apparently trivial matter seems to have been charged a very high fee, the complications demanding extra and unusual care, if shown, will be given due consideration and the liability to injustice to the physician lessened.

Oklahoma City, Okla. Jan. 1, 1922.

Dr. Carrol A. Johnson, Wilson, Oklahoma.

Dear Sir: Your communication of January 19 and bearing the names of several persons in typewriting, addressed to the State Industrial Commission, has been received.

We have read this letter and considered it with care. We regret of course that there has been engendered feeling among the physicians of Wilson, and that vicinity, with reference to the attitude of the Magnolia Petroleum Company. However, this is a matter over which we have no authority except it is the duty of the Commission to see that injured persons coming under its jurisdiction have proper medical treatment. But so long as the treatment is administered by competent physicians we have no statutory authority to interfere. As the law is constituted, it is a matter entirely of private contract. Any company has the right to employ as many or as few as it chooses to do; but so long as its casualties are properly cared for the State Industrial Commission has no legal right to interfere. And as to the designation of the hospitals the same must be said.

With personal regards and best wishes, we are, Very respectfully yours,

Baxter Taylor, Chairman.

Editorial Notes—Personal and General

Dr. L. H. Hill, Idabel, is in St. Louis doing special work in eye, ear, etc.

Dr. V. R. Hamble, Okeene, has assumed charge of the Okeene Hospital.

Dr. W. E. Dicken, Oklahoma City, attended Chicago and Rochester Clinics in February.

Dr. S. E. Mitchell, Stigler has located in Muskogee and will do eye, ear, nose and throat work.

Dr. A. L. McInnis, Enid, mourns the loss of his father who died at Llano, Texas, January 12.

Dr. James C. Braswell announces his location at Tulsa, proposing to specialize in eye, ear, nose and throat work.

Dr. A. D. Young, Oklahoma City, recently addressed the Public Welfare League of his city on the use of mental tests for delinquents.

Dr. Roy Pendergraft, Hellis, visited Corpus Christi, the home of his parents, Dr. and Mrs. W. C. Pendergraft, formerly of Oklahoma.

Dr. Willis K. West, 316 Terminal Building, Oklahoma City, announces that he will hereafter limit his work to orthopedic and industrial surgery.

Dr. L. W. Cotton, Enid, suffered a severe injury January 7, when his automobile was struck by a street car. He was soon able, however, to resume his work.

Muskogee's Health Department recently gave out a statistical report showing a most remarkable record as to freedom from contagious and infectious diseases. The report indicates the lowest morbidity rate in the state for the time covered.

Dr. Edward De Meglio, Oklahoma City, according to press dispatches, failed in securing naturalization papers upon application to Federal authorities in that city in January. Dr. De Meglio has been here since 1906, coming to this country from Austria.

Dr. G. M. Clifton, Norman, has joined the great and ever growing order of auto thief victims. His Ford coupe was stolen from his garage on the night of February 4. A reward for the recovery of the car and the apprehension of the thief has been offered.

The American Medical Association makes official announcement that they meet in St. Louis, May 22-23-24-25 and 26. Advice that hotels be now reserved is made, and if not satisfied by personal effort, write Dr. Louis H. Behrens, 3525 Pine, St. Louis.

Ardmore proposes to have a county hospital for the care of people unable to pay for their care. A committee has been appointed by Dr. G. W. Amerson, president of Carter County Society, to confer with the county commissioners and devise the plans therefor.

Cushing Hospital is now an assured matter. All preliminaries incident to sale of the bonds having been cleared, contract for the building and all other needs let, work will begin at once. The building will cost \$50,000.00; the site, \$5,200.00; fixtures and electrical appliances \$6,800.00 and other essentials \$4,000.00.

Dr. Antonio D. Young, 1011 First National Bank Bldg., Oklahoma City, while enroute to Cuba and Panama recently was compelled to abandon his trip because of illness. He reached Daytona, Florida and remained eight days in a hospital there. The diagnosis was cardiospasm. It has been suggested that the contraction of the oesophagus was due to anticipation of fluids he might have been able to introduce into his gastric cavity had he reached Havana.

Dr. Fowler Border, Mangum, was one of a large party of Oklahoma business men visiting Mexico in February. The itinerary included practically all the important cities and points of interest in the Republic. President Obregon tendered the visitors his official welcome and they were shown every courtesy. The party left Oklahoma via the Rock Island lines, occupying throughout the trip the Pullman cars in which they began the journey, with the slight gap between Vera Cruz and the City of Mexico. Among the unusual features was an aeroplane trip from Mexico to the Tampico oil fields, for such as desired to take the trip. At Matamoras the party was met by the Mexican Consul General, who accompanied them for the remainder of the trip.

Carter County Physicians residing in Wilson and Healdton, recently held an indignation meeting, protesting against the action of a representative of the Magnolia Corporation, who, in effect debarred most of them from the emergency work of that company, when he issued an order that his company would after that date, pay only for first aid work, except that done by its regularly appointed surgeons. The physicians propose to carry the matter to the court of last resort before submitting to

what they term "discrimination," "injustice" etc., not only to them, but the hospitals of their communities as well.

Okmulgee County Society program for February 13, listed the abdication of its old officers and the ascension to the throne of those elected for 1922. A paper "Lobar Pneumonia" was offered by Dr. O. O. Hammond, Okmulgee, to be discussed by Dr. W. L. Stephenson, Henryetta; an "X-ray Clinic" under direction of Dr. C. M. Ming, demonstrated or discussed by Dr. J. E. Bercaw, both of Okmulgee, and "The Treatment of Fractured Tibia and Fibula" by Dr. F. L. Nelson, Okmulgee, discussed by Dr. G. Y. McKinney, Henryetta, were drawing attractions of the meeting.

The American Medical Association announces a Chicago meeting March 6 to 10, under the auspices of the following subsidiary committees of the parent body: "Council on Medical Education and Hospitals;" "Council on Health and Public Instruction;" "Association of American Medical Colleges;" "Federation of State Medical Boards of the United States" and "The American Conference on Hospital Service." Meetings will be held in The Florentine Room, Congress Hotel. Information may be had by writing Doctors Alex R. Craig, Frederick R. Green, or N. P. Colwell, 535 North Dearborn, Chicago. The names of Bevan, Colwell, Wilbur, Hugh Cabot, Dodson, Sinnser, McClintock, Strickler, McDavitt, Vaughn, Frederick Green, Billings and many others warrant the success of the affair at the outset.

Tulsa County Society meeting February 13, offered, among other stellar attractions, a paper by Dr. R. A. Douglass on "Various Phases of Diagnosis and Treatment of Hemorrhoids." Mrs. Ferrell, a Chautauqua lecturer, was scheduled to briefly address the meeting on the "Value of Physical Training in the Promotion of Health." The Secretary made the precautionary statement in his Bulletin to the members that Mrs. Ferrell was not a "Chiro."

A representative delegation from the local Dairyman's Association was to be heard as to their views on the proposed milk ordinance for Tulsa. Secretary Summers did not fail to append a foot-note in the Bulletin advising members that papers proposed for reading at the State meeting should first be offered to the contributor's society. This requirement has always been more honored in the breach than by observance. That it is a sensible safeguard will be apparent upon recalling some of the farces and abnormalities occasionally heard at our annual meetings.

Tulsa County Society, meeting December 8, heard a paper by Dr. J. Winter Brown on "Practice in China." By a vote of 24 to 10 Dr. H. B. Gwin was expelled, after trial by the society. Constitutional amendment prohibiting members from carrying cards in public print was adopted by vote of 19 to 9. A present of Christmas cigars to the Tulsa police was ordered. The Wertheim Obstetrical motion picture film was ordered secured. Dr. J. Winter Brown, after adjournment exhibited to the members his collection of curios from the Orient.

Tulsa County Society, (Meeting January 23. Dr. Chas. H. Ball, the President, presiding.)

Visiting members of the Oklahoma Serological Society were presented to the society. Dr. W. Forrest Dutton read a paper on "What the Medical Profession Expects of the Laboratory;" Dr. Wann Langston, Oklahoma City, Chief of the University Laboratory, read a paper on "What the Laboratory Expects of the Medical Profession." The papers were discussed by Dr. Wm. H. Bailey, Oklahoma City, and Dr. Lyman A. Barber, Tulsa. Drs. D. M. McDonald and J. C. Peden were received as members. After adjournment lunch was served, the members then attending the presentation of the Wertheim Obstetrical Film at Majestic Theatre.

The Oklahoma Association of Laboratory Workers is the changed title of the State Serological Association. The change, in name only, made January 23, at the Tulsa

meeting, was to enable extension of membership to those technicians and laboratory workers, not necessarily physicians. This made possible the election of Mr. Fred Severs English, Muskogee, who, though not a physician, is a skilled laboratory technician, Secretary-Treasurer of the organization. Mr. English, who is assistant Pathologist in Muskogee Laboratory, is the grand son of one of the State's pioneers and financiers of the past, Captain F. B. Severs. Mr. L. E. Woods of Enid was elected President and Dr. Wm. H. Bailey, Oklahoma City, vice-president.

The question of standardization of technic and antigens, especially in the Wassermann test, was up for discussion, it being generally thought that physicians were dissatisfied with the present variance found by reason of different methods being used. Difficulty of such unification, however, was realized and the subject was deferred until the next annual meeting, in the meantime all laboratories will be called on for suggestions and cooperation.

A resolution was adopted that the annual meeting be held the day previous and in the city of meeting of the Oklahoma State Medical Association.

Responsibility attaching to the work of technicians brought a resolution that a set of requirements as to efficiency be formulated and that all members of the Association be required to establish their fitness in that respect as a prerequisite to membership. It is hoped that much of the present dangerous and incompetent work of unskilled workers may be avoided. The necessity of legal safeguards was also discussed.

DOCTOR MILLARD FILMORE DECKER

Dr. M. F. Decker, Comanche, died suddenly at Corum, Oklahoma, December 29. He had been in splendid health, so death came to him with little or no warning.

Born March 9, 1866, at Macoupin, Illinois, after receiving such literary preparation as was offered by the common schools of his vicinity, he finally entered Barnes College, graduating therefrom in May, 1904. Practicing in St. Louis one year, he then moved to Flora, Illinois, remaining for three or four years, then to Comanche, Oklahoma, after which he located at Corum, where he died. Married to Miss Mattie E. Markham, Taylorville, Illinois, in 1892, the union resulted in one son, Ivan F. Decker, who resides at Corum, the family home.

Funeral services were held under the auspices of the Scottish Rite Masonic Fraternity, midnight December 31, at low 12:00 o'clock, Corum M. E. Church, and at the family residence January 1, conducted by the Reverends Paul Haskins, Pauls Valley, and J. J. Ward of Corum; after which the Master Masons interred the remains in the Duncan cemetery. Diamond Chapter, O. E. S., Corum, directed a committee to prepare fitting resolutions on his demise, the Duncan Banner regarding him as "Our beloved and honored fraternal and Christian brother." The resolutions noted the fact that he was indeed a friend to the needy, stressing especially his devotion to his work, his tolerance to the faults of others and his ever readiness to aid the distressed.

MUSKOGEE'S "TARTAR"

The Tulsa World has this to say about the Muskogee Hospital situation, a very accurate appraisal.

It now appears that Muskogee got something beside a soldier hospital when its offer to the locating board was accepted. Muskogee had already arranged to erect a \$150,000 municipal hospital on the tract offered the state hospital board. Now the state board demands the right to name the architect for both institutions—the Muskogee institution as well as the soldier institution, and Muskogee architects are so wroth that they are spitting cotton. Yet official Muskogee is afraid to say a word because of the danger of the locating board changing its mind and taking the soldier institution somewhere else. How blessed it is not to be mixed up with any of these state

institutions, their political godfathers and pet architects! Sometimes we are prone to think Tulsa people do not know just how fortunate they have been in never having had anything to do with state institutions. Muskogee had as well get accustomed to the political goose-step; she'll have to learn to like it.

IMPORTANT NOTICE

Annual meeting date has been changed to May 9-10-11, 1922. Notice that this was unavoidable was given the Journal at the last moment. Four other organizations scheduled for meetings on that date render this change imperative. The date selected was the best left open, all things taken into consideration. It is positively necessary that all officers and section chairmen cooperate in giving this change wide publicity. It also demands rapid making up of section programs, addresses, reports, etc.

C. A. Thompson, Secretary.

Abstracts, Observations from Current Medical Literature

CERTAIN FUNDAMENTALS IN EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS

Lawrason Brown, M. D., Saranac Lake, N. Y.
(*Jour. Am. Med. Assn.*, Jan. 14, 1922, p. 79.)

The author, approaching the problem from the viewpoint of the general practitioner, assumes that the following questions must be answered:

1. Has the patient pulmonary tuberculosis? If so, how much involvement and how much activity?
2. What must be the probable duration of the treatment?
3. If prolonged treatment is required must it be in the home, sanatorium, hospital, or in a class?
4. What shall the patient be told?

These points are then taken up and discussed in detail. He considers five data essential in the diagnosis of pulmonary tuberculosis, which, in the order of their importance, are: (1) Tubercle bacilli in the sputum; (2) A parenchymatous rentgen-ray lesion above the second rib and the spine of the third thoracic vertebra; (3) Moderately coarse rales above the second rib and the third thoracic spine; (4) Hemoptysis; (5) Pleurisy with effusion.

Pre-requisite to a negative diagnosis is the absence of all five of these data. Either hemoptysis or pleurisy with effusion alone justifies the diagnosis of suspected pulmonary tuberculosis, while moderately coarse rales, or parenchymatous rentgen-ray lesions in the apices should be considered as due to tuberculosis, unless the contrary can be proven. The finding of three or four tubercle bacilli makes the diagnosis certain, but the diagnosis must in the majority of cases be made before this evidence is available.

In doubtful cases a negative subcutaneous tuberculin reaction has proven, in the experience of the author, almost infallible in deciding against the necessity for treatment.

The occurrence of tubercle bacilli in the sputum indicates activity of the process in about 90% of the cases,

and the presence of elastic tissue in the sputum in 100%, but the diagnosis of clinical activity must be based largely, if not entirely on physical signs. Cough and expectoration, rales, and even in certain cases, the presence of tubercle bacilli in the sputum, are not positive evidence of activity.

Benjamin H. Brown

PRESENT TENDENCIES IN THE TREATMENT OF CONGENITAL CLUB-FOOT

Eben W. Fiske, M. D., Pittsburgh

In a questionnaire sent out to sixty-six Orthopedic Surgeons, the following question and answers were compiled.

1. At what age do you prefer to begin treatment of congenital equino-varus?

Answers: Ninety percent in favor of beginning in the first month and three-fourths of these in the first week. Only four surgeons would wait longer.

2. What method do you employ in your youngest cases?

Answers: All manipulate in the beginning. All but three follow with fixation. Forty use plaster of paris. First treatment under anesthesia is used by three men two of them operating. The general opinion is decidedly in favor of immediate treatment of the new-born when possible by manipulation.

3. Under what conditions do you use tenotomy and forcible correction with anesthesia in cases under six months?

Answers: Fifty-six per cent were opposed to operation or anesthesia. Thirty-four per cent were conservative in their views and ten percent who might be considered radical.

4. Under what conditions do you use tenotomy and forcible correction with anesthesia in cases under two years?

Answers: Sixty-five percent employ tenotomy and forcible correction. Thirteen per cent are still opposed at the age of two years and twenty-two per cent favored these methods. There is then a trend from the conservative to the operative in the second year but a majority do not favor bone operation.

5. What is your general method in older or relapsed cases? What operative procedure do you find most successful?

Answers: Thirty-four generally employ radical bone operations, while twenty-one follow lesser measures by a bone operation only if the former fails. Eight use non-operative measures.

Earl D. McBride, M. D., Oklahoma City.

NEW BOOKS

THE LIFE OF JACOB HENLE

By Victor Robinson, M. D., Formerly Editor of the Medical Review of Reviews; Editor of Medical Life, bound in green cloth, and cardboard, with an emblem in gold, one photogravure of Henle, 117 pages, Price \$3.00, 1921, Medical Life Company, 12 Mount Morris Park West, New York.

"The greatest histologist of his time; the greatest anatomist of all times. . . . A Jew, first describer of epithelia of the skin and intestines, ciliated and columnar epithelium, sensed its function, demonstrator of the endothelial coat of vessels, which discovery was the capstone of our present theories of the vaso-motor mechanism. He discovered the striated muscle of the bladder, central chylous vessels, internal root-sheath of the hair, what we now call in his honor 'Henle's tubules' in the kidney, gave the first accurate account of the corneal morphology, development of the larva. First appreciator of the importance of many parts of the brain, relations of the hippocampus, character of the pituitary body." This and much more is the tribute paid by the

medical historian, Garrison, to the remarkable achievements of a most remarkable man. Garrison, by the way, is given grateful credit by the author of this life for "the circumspection with which he read the manuscript, his courtesy in offering many helpful suggestions." Perhaps no medical editor is better fitted by ability and enthusiastic interest than is Dr. Robinson to record the outstanding epochs of the great of the medical profession who have gone before, but in going left their imprint on time. Certainly Henle left his. His struggles, activities, sorrows and joys, disappointments and triumphs, but above all, the little intimate characteristics of the man, his peculiarities and the things not incorporated in the pages of his medical productions, are made the subject of Dr. Robinson's tribute to the man.

THE PRACTICAL MEDICINE SERIES

Volume 6, Under the General Editorial Charge of Charles L. Mix, A.M., M.D., Professor, Physical Diagnosis, Northwestern University Medical School etc, etc. Cloth, illustrated, price \$1.75. Series 1921. The Year Book Publishers, 304 South Dearborn St., Chicago.

PHARMACOLOGY AND THERAPEUTICS

By Bernard Fantus, M.S., M.D., Assistant Professor of Therapeutics, Rush Medical College.

PREVENTIVE MEDICINE

By Wm. A. Evans, M.S., M.D., LL.D., D.P.H., Professor of Sanitary Science, Northwestern University Medical School, with the collaboration of G. Koehler, M.D., Assistant Commissioner of Health, Chicago.

251 pages of this volume are devoted to a boiled down, but authoritative digest of pharmaceutical literature, advancements and improvements for the year since issue of its predecessor. Fantus is so well able to select the best of such that restating that fact is unnecessary. The remainder of the 380 pages is in the same high class as above noted. Dr. Evans is the most popular director of public thought on matters of public health America has ever produced.

MEDICAL AND SURGICAL REPORTS- EPISCOPAL HOSPITAL, PHILADELPHIA. VOLUME V.

Prepared by the Committee of Publication, Edited by Astley P. C. Ashurst, member, M. D., with the collaboration of John B. Carson, M. D., Chairman, and Harold Goldberg, M. D., member of the board. Cloth, illustrated, 506 pages, 1920. Press of Wm. J. Doran, Philadelphia. Price

Contributors to this volume, thirty-four in number, contain among the personnel many names held in high esteem by the American profession, Ashurst, H. C. Deaver, William E. Parke, Bruce Gill, the orthopaedic surgeon, John Paul Jones, Warren Walker, sufficient to have one judge the merit of the work. Statistical tables indicate the number, type, and type subdivisions of the 4,534 patients admitted to the hospital, not counting the average daily dispensary cases, which number 222.5. The War's toll is indicated by the fact that the gross cost per patient per day for 1917 was \$2.40; 1918, \$2.38; 1919, \$3.25. The present volume is the only one published since 1916, likewise due to war's demands.

Warren Walker lays down a compact, workable system for operating a venereal clinic, which has unusual time saving suggestions, and which, after modification to fit the needs of the clinic in mind, should be applicable to all clinics. He provides for complete examination, taking into scope the special functions and infections of the eye, nervous system, etc. The needs of the clinic are also listed. "The Method of Recording Surgical Operations at the Front" is one of the contributions of Ashurst, and holds so much of the fine, accurate system of the French, that it would be well for every man, vexed and harried by work, made more vexed and harried by lack of system, to read. If we are deficient in any one thing almost universally, especially the small town doctor, it is in the keeping of accurate records. We pass it up with the excuse that we have not time. Inauguration of a good system saves time. Ashurst also illustrates "End Results of Certain Methods of Bridging Defects in Peripheral

Nerves," of great interest to the emergency and industrial surgeon.

Throughout the work is a fine resume of the hospital's cases, and naturally a wide range of subjects are treated.

PRINCIPLES OF MEDICAL TREATMENT

By George Cheever Shattuck, M. D., A. M., Assistant Professor of Tropical Medicine, Harvard Medical School. Formerly Assistant Visiting Physician, Massachusetts General Hospital. Fifth Revised Edition, with the collaboration of the following authors, "Tuberculosis," John B. Hawes, 2nd., M. D., Assistant Visiting Physician and Director of the Clinic for Pulmonary Diseases, Massachusetts General Hospital etc. "Acute Infectious Diseases Most Common in Childhood," Edwin H. Place, M. D., Physician in Chief of South (Contagious) Department, Boston City Hospital, Assistant Professor of Pediatrics, Harvard Medical School. "Influenza," Gerald Blake, M. D., Associate in Medicine, Massachusetts General Hospital, Instructor in Medicine, Harvard Medical School. "Diabetes Mellitus," Benjamin H. Eagle, M. D., Assistant Physician to Out-Patients, Massachusetts General Hospital. "Serum Treatment of Pneumonia," Henry M. Thomas, Jr., M. D., Resident Physician, Johns Hopkins Hospital. Beautifully bound in Silk Cloth, 309 pages, Price \$3.50, Boston 1921, W. M. Leonard, Inc., Publishers.

Of the greatest convenience to the physician given to adding to what he considers good and worth saving for the future, is the blank page facing each page of the text. We cannot help wonder why that has not been incorporated in other similar works.

The work is simply all meat, no dross, speculative, theoretical lines cumber its pages. Terseness and brevity, with delightful diction, characterize the text and makes of it anything except the dryness so often accompanying medical writings. Therapeutic measures of every useful recognized standard are made up into thorough text, which leaves no important principle forgotten. Shattuck's style is of the rare class systematically covering the ground in the clearest language. Physiological and therapeutic measures, with the "why" of the drug in a given instance, are fully expressed, so that one considering the needs of his patient has the ground covered in such manner as leaves nothing worth while in the "absentees" of medicine.

PSYCHOANALYSIS

(Second Edition)

Psychoanalysis: Its Theories and Practical Application. By A. A. Brill, Ph. B., M.D., Lecturer on Psychoanalysis and Abnormal Psychology, New York University. Third Edition, thoroughly revised. Octavo of 468 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, \$5.00 net.

PAPERS FROM THE MAYO FOUNDATION

Papers from the Mayo Foundation for Medical Education and Research and the Graduate School of Medicine of the University of Minnesota, covering the period of 1915-1920. Octavo volume of 695 pages with 203 illustrations. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, \$10.00 net.

NEOPLASTIC DISEASES

(Second Edition)

Neoplastic Diseases. A treatise on Tumors. By James Ewing, M. D., Sc. D., Professor of Pathology at Cornell University Medical College, New York City, Second Edition, Revised and Enlarged. Octavo of 1054 pages with 514 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth \$12.00 net.

INFANT FEEDING

(Fourth Edition)

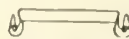
Infant Feeding. By Clifford G. Grulee, M. D., L. L. D., Associate Professor and Acting Head Department of Pediatrics at Rush Medical College. Fourth Edition, Thoroughly Revised. Octavo of 397 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, \$4.50 net.

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Obstetrics and Pediatrics, Dr. W. W. Wells, Oklahoma City, Chairman, Dr. J. Raymond Burdick, Tulsa Secretary.

"THE ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION."

The May meeting of the American Medical Association at St. Louis promises well toward being the largest in attendance of any of the Association's sessions. Since the publication of the hotels in the Journal of the Association in December, inquiries and reservations are being made daily. The hotels and the Convention Bureau are aiding the Committee in a most satisfactory and helpful way to see that the Fellows are comfortably housed and accommodated. The A.M.A. meetings tax all cities entertaining them to the limit of hotel capacity. Whenever possible a good Fellow should double up so that no one is left without comfortable lodging.

Reservations should be made by communicating direct with the hotels. If satisfactory arrangements cannot be made in this way, write to Doctor Louis H. Behrens, Chairman Committee on Hotels, 3525 Pine Street, St. Louis, Mo."

Yours very truly,
Thomas A. Hopkins, M. D.
Chairman Committee on Printing.

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American Annex, 225 rooms, 6th and Market Sts.—With bath: single, \$2.00-\$3.00; double, \$3.00-\$6.00.

Pathology and Physiology—Pharmacology and Therapeutics:

Beers, 114 rooms, Grand and Olive Sts.—Without bath: Single, \$1.50; double, \$2.50. With bath: Single, \$2.00-\$2.50; double, \$3.00-\$3.50.

Brevort, 50 rooms, 4th and Pine Sts.—With bath: Single, \$2.00; double, \$3.00.

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Surgery, General and Abdominal Orthopedic Surgery:

Laclede Hotel, 265 rooms, 6th and Chestnut Sts.—Without bath: Single, \$1.50-\$2.00; double, \$2.50-\$3.00. With bath: Single, \$2.50-\$3.00; double, \$3.50-\$4.00.

Majestic, 200 rooms, 11th and Pine Sts.—With bath: Single, \$2.50-\$3.00; double, \$3.50-\$4.00.

Dermatology and Syphilology—Nervous and Mental Diseases:

Marion Roe, 200 rooms, Broadway and Pine Sts.—With bath: Single, \$1.50-\$2.00; double, \$3.00-\$4.00.

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Maryland, 240 rooms, 9th and Pine Sts.—Without bath: Single, \$2.00; double, \$3.00. With bath: Single, \$2.00-\$3.50; double, \$3.00-\$5.00.

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Planters, 400 rooms, 4th and Pine Sts.—Without bath: Single, \$2.00-\$2.50; double, \$3.00-\$3.50. With bath: Single, \$2.50-\$5.00; double, \$4.00-\$8.00.

Ophthalmology:

Plaza, 200 rooms, 3300 Olive St.—With bath: Single, \$2.00-\$2.50; double, \$3.50-\$5.00.

Roselle, 100 rooms, 4137 Lindell Blvd.—With bath: Single, \$1.50-\$2.50; double, \$2.50-\$3.50.

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Stratford, 100 rooms, 8th and Pine Sts.—Without bath: Single, \$1.50; double, \$2.50. With bath: Single, \$2.50; double, \$3.50.

Terminal, 100 rooms, Union Station—Without bath: \$1.50-\$2.00; double, \$3.00. With bath: Single, \$3.00-\$3.50; double, \$5.00.

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NUMBER 3

THE FRONTAL SINUSES*

L. C. KUYRKENDALL, M. D.
McAlester, Okla.

While we know that it is rare indeed for only one sinus to be affected, by that I mean frontal sinuses only, yet in this paper I expect to devote my attention to the frontal sinuses only.

Let me review very briefly the anatomy of the frontal sinuses. They are merely an extension upward and outward, sometime extending backward, of the ethmoid cells between the two plates of the frontal bone, this extension occurring about puberty and reaching their full development about the twentieth year. The frontal sinuses are situated at the position of the glabella and superciliary eminences, and are absent in infants and children. The external or anterior bony wall is the thicker of the two walls. Just above the inner angle of the orbit is the thinnest portion of the external wall and when pus bursts externally it is usually at this point. A thin osseous partition, sometimes incomplete, usually separates the two sinuses. The frontal sinuses vary greatly in different individuals as regards shape and size, and very often the two sinuses vary in the same individual, one being large the other small or one may be rather regular in outline while the other has a ragged or irregular outline. The sinuses are smaller in women than in men as a usual thing, sometimes being entirely absent. The sinuses are lined by mucous membrane which is continuous with that lining the nose. They open through the infundibulum into the middle meatuses of the nasal fossae. Before attempting any operative procedure in a frontal sinus empyema, it is very necessary to know any variations that may exist, as upon this knowledge rests your operative procedure. Extensive deformity may result from the removal of the entire anterior wall if the sinus is large and deep; therefore, in a case of that kind your operation must be executed so as to avoid any great

amount of deformity especially in woman as they are much more particular and sensitive as regards deformity and scars of the face than men.

The size, shape, depth or any variations in the sinuses can only be demonstrated with the X-ray. One plate is not sufficient, but you must have an antero-posterior as well as lateral view if you are to determine accurately the condition of your sinuses. It also will aid you in determining the operation indicated in that particular case.

The source of infection of the frontal sinuses is the nose. The most common cause being, of course, the catarrhal bacillus. Acute catarrh of the frontal sinus is the most common disease, being more common than of any of the other sinuses, although mixed infection usually follows later in the disease process, producing suppuration. This usually following syphilis, gonorrheal infection, long closure of the infundibulum, tumors or traumatism. Maggots, insects, centipedes or other living foreign bodies may gain entrance to the sinuses and produce suppuration although maggots are usually the result of there having been a previous suppuration that attracted the fly.

The symptoms are tenderness, headache, dizziness, vertigo, nausea and vomiting, sometimes ocular symptoms as well as intra-cranial complications. A mucous discharge is usually present while redness and swelling is only present in very severe acute inflammations.

Only in acute cases where the drainage is obstructed will you find tenderness over the frontal bone, but it is not rare to find tenderness when pressure is made to the floor of the frontal sinus. Pressure should always be made upwards in the inner angle of the orbital cavity so as not to mistake tenderness of the anterior ethmoid for frontal sinus tenderness.

The headache is frontal and is limited to the side affected or the side upon which it originated, is more severe at night and early in the morning than at any other time and often is confused with or referred to error of refraction. The differentiation is usually very easy.

*Read before Section Eye, Ear, Nose and Throat at Annual Meeting, Oklahoma State Medical Association, May 17, 18, 19, 1921, at McAlester, Okla.

The dizziness or vertigo may be slight or severe depending upon the severity of the condition at hand. Any sudden change of the posture intensifies this symptom.

Due to the very free anastomosis of the veins of the sinuses with the ophthalmic vein a variety of ocular symptoms may be present, edema of the lids, optic neuritis, keratitis, choroiditis, iritis, etc. Meningitis, brain abscess, sinus thrombosis and extra dural abscess, may complicate frontal sinusitis, the most frequent of these being meningitis. Although the others mentioned are not rare.

Very often you are able to relieve the pain and headache after cocainizing the parts by inflating the frontal sinus with mentholiodin-chloroform vapor this being used in politzer bag. I have had success with the following treatment. I have the patient take about one quart of boiling water and place a teaspoonful of Tr. Benzoin Compound in it, cover the top of the bucket or small mouthed vessel with a heavy bath towel shaping it around the vessel in such a way that a small opening is left in the towel through which the patient may take deep inhalations of the steam, then using Valsalva's method as for the inflation of the Eustachian tubes. I sometimes use the following with equal success, using it the same as above.

Gum Camphorae

Mentholis

Beech wood Creosote.

Quite often relief may be obtained by means of suction or by using a nasal syphon, a good one being advertised in the Journal A. M. A. There are a great many local applications which may be used but, with the exception of cocaine and adrenalin chloride, I consider them worthless or at least possessing so little therapeutic value as to be of no practical use.

When the condition becomes chronic or relapses occur, surgical interference is then indicated, the mode of procedure depending upon the case in hand and the whim of the operator.

Jurasz was the first to introduce a sound into the frontal sinus through the nasal opening. Killian is responsible for the first systematized work in draining the frontal sinus by operating through the nose. The successful operative work of this character was, however, developed more recently by Ingals, Good, Halle and Mosher through the operations which bear their names. The aim of all intra-nasal operations on the frontal sinus is to improve its drainage by removing obstructions within the nose or by enlarging the naso-frontal opening.

Before undertaking a specific frontal sinus operation, a resection of the anterior end of

the turbinate bone should be done, the removal of nasal polypi and the curettement of the ethmoid cells as very often good drainage is established and no frontal sinus operation is then needed.

A short description of the different intra-nasal operations may be of benefit. Good's operation consists in enlarging the naso-frontal duct by means of a rasp which he has devised and by its use files away the bony walls and the nasal floor of the frontal sinus. Care must be used so as to not injure the surrounding structures. Good uses a drain of gold mesh.

Ingals's operation consists in using a hollow burr attached to a dental engine, the burr having been slipped over a pilot probe which has been previously introduced into the frontal sinus. By means of this burr the naso-frontal canal is enlarged. Ingals has a special drainage which is inserted through the canal into the sinus and may be left for several months. Ingals's operation should be only performed by an experienced operator. The same may be said of Halle's operation in that they are very similar, the only difference being in the shape of the burr used.

The extra nasal operation on the frontal sinus was done originally for empyema in the hope that by an external drain the pus formation of the frontal sinus would be more quickly and satisfactorily relieved. Ordinarily a small opening was made in the bone by trephine or chisel but due to the opening not being in the most dependent portion of the sinus and due also to the often irregular shape of the sinus, this mode of drainage was not universally successful. Killian has probably done more to overcome the failures of extra nasal operations on the frontal sinus than anyone else. The extra nasal operation is indicated when relief has not been attained by intra-nasal operation or when the symptoms for which the original operation was done persists or when severe headaches due to the condition of the frontal sinus are present. The extra nasal operation on the frontal sinus consists in making an opening through the bone into the frontal sinus, different operators having different opinions upon the extra amount of bone to be removed. Each one, of course, possessing a greater or less degree of efficiency, I do not think there is any hard and fast rule by which the operator may be guided in these cases but he must of necessity utilize his own initiative and meet the condition as it exists. The case I wish to present is not so unusual but will illustrate most forcibly the demand for an X-ray examination before operative measures are instituted. All of us have probably had the same in our own practice. This case was operated in the summer of 1920 by one

of the best known Rhinologists in the west. The intra-nasal operation having been done at that time. The relief was only transitory. She and her husband late in the summer moved to McAlester in the hope that the change of climate would improve her condition, for a short while she was better of the headache but in October with the coming of cooler weather, her symptoms returned and she was compelled to seek relief.

Mrs. R., age 28, housewife, presented herself complaining of excruciating headache in the right frontal sinus region. Examination reveals a well developed woman, weight 158-5 ft., 9 in., in height.

Past History. Two years ago had an attack of appendicitis, for which she was successfully operated. During the early summer of 1920 was operated by the intra-nasal route for empyema of the right frontal sinus; upon examination of the right nasal cavity a small amount of thick creamy pus is seen coming down from the region of the naso-frontal duct; the mucus membrane of the nasal cavity is

and pulse normal; an application of cocain and adrenalin was made to the tissue and with difficulty a small probe was passed into the naso-frontal duct. The nasal cavity was



hyperemic and swollen. The anterior tip of the turbinate bone has been removed. Area directly over or anterior to the frontal sinus is very tender upon slight pressure. Transillumination reveals cloudiness; temperature

washed out with Dobel's solution. Then an oily spray was used. The patient given an oily spray instructed as to how often to wash or douche the nasal cavity as well as told how to use the Tr. Benzoin Compound treatment for the pain and told to return the next day. As long as the treatment was carried out as per instructions, the patient did well but, as is so often the case, the drainage was interfered with by negligence and for about three weeks previous to Feb. 7, 1921, I did not see the patient. On this date she appeared at my office complaining of severe pain over the right forehead as well as severe headache. The right upper eye lid was swollen to such an extent that she was unable to see with that eye. She was extremely tender over the right frontal sinus. I advised a roentgenogram. Dr. Johnston's report is as follows: "Very large multilocular frontal sinus which is more opaque on right than on left. The sphenoid and ethmoid cells are clear. The antri are clear. Indications right sinusitis frontal." In view of the X-ray finding an extra nasal operation was advised, so on Feb. 10, 1921, under ether anaesthesia after having shaved

the right eye brow, an incision 3-4 inch long was made in the median line of the forehead extending down on the base of the nose. An incision was then made at right angles about 1 1-2 inches long in the right eye brow. An opening about 3-8 inch in diameter made in the anterior plate of the frontal bone with chisel into the frontal sinus, upon puncturing the perosteal lining membrane quite a quantity of pus escaped. The frontal sinus was thoroughly curetted of exuberant granulation tissue. The naso-frontal duct was then enlarged by means of curette, thereby establishing good drainage into the nose. The skin was then closed. The patient made the usual slow but uneventful recovery. The conclusion drawn is that without the X-ray this case might have been subjected to another intra-nasal operation and, as you can readily see after having seen the size of the sinus, it would have been unsuccessful. Each and every frontal sinus case should be X-rayed.

Discussion.

Dr. D. D. McHenry, Oklahoma City. I will discuss what I got from this paper as the doctor read it. He spoke in his paper very thoroughly of the irregularities of the anatomy of the frontal sinuses. I heartily agree you should have an X-ray on all chronic, frontal sinus conditions, as by this means only can you get the irregularities of the anatomy. The acute conditions are easily diagnosed and it is unnecessary to put the patient to this extra expense.

The doctor takes in a few more sources of infection than I usually have been able to see. I have never seen any frontal sinus infection that was due to gonorrhea or maggots and have never seen any due to syphilis outside of the general infection of the septum, ethmoids and the bones surrounding from a general syphilitic condition. If it involved the frontal sinus, it would surely involve the ethmoids, the septum and all of the bony tissues surrounding. I also have not noticed as much dizziness or vertigo in my frontal sinus cases as the doctor describes. Only very occasionally have I seen it. The discharge, the pain and the tenderness are the things on which I make my diagnosis, and, occasionally, on a case that is not easily diagnosed from these, by the X-ray.

Another thing the doctor speaks of is the ocular symptoms from frontal sinus lesions. I don't believe we have so many ocular symptoms as the doctor states from frontal sinus lesions alone. True, if we have pansinusitis we will get these symptoms of optic neuritis and optic atrophy and so forth, but I do not believe we will get those from a frontal sinus alone. If so, it is exceedingly rare.

As to the treatment in the acute cases. Usually a shrinking of the external wall of the middle turbinate and the osteum around the lower end of the fronto-nasal duct with cocaine and adrenalin and some suction, cure the great bulk of the acute cases in my hands. Occasionally, if the middle turbinate presses tightly against the external wall and there is toom between it and the septum to fracture it over toward the septum giving more room in the middle meatus, I do that if it doesn't yield in a few days to the milder line of treatment. Occasionally, in a very few cases, it is necessary to remove a small tip of the anterior end of the middle turbinate; only occasionally, however, in my hands. The great bulk—I think Skillern gives 90 to 95 per cent of his acute cases—are cured if you will help the normal drainage a very little.

In the sub-acute cases, a case that is not cured in a few weeks time at least, my practice (as the doctor spoke here of the intra-nasal operation) has been to open up an anterior ethmoid cell or two, and probably remove a small piece of the middle turbinate, unless I can fracture it over and give room. And going further along the line of Dr. Todd's (See "Conservative Intra-Nasal Surgery," No. X, Vol. 14, Oct. 1921 -This Journal.-H. Coulter Todd) excellent paper here this morning, I think you can generally, if you have an average nose at least, remove an anterior ethmoid cell or two around the lower end of the naso-frontal duct and give drainage in these sub-acute cases without removing any, or at least a very small amount, of the middle turbinate. You probably all remember that Pratt of Minneapolis brought out a paper a year or two years ago on which he did practically all of his ethmoid work without removing the middle turbinate. And I think this can be done and I most emphatically think it should be done when possible. In draining the ethmoid cells, you necessarily make a lot of room to give drainage, and if you go ahead and remove a lot of turbinate, then you have too much room and get the atrophic condition spoken of here this morning. So in these sub-acute cases, or even in the chronic cases, following the opening up of an ethmoid cell or two, I use the Goode's rasp or files in opening the fronto-nasal duct. I also have a set of curets which I think Freer devised a few years ago. In this set of curets is one that curets backward. From the fact of the irregularities of the anatomy, that is an instrument I have always been afraid of and I think it is much safer to do a nasal operation under general anesthesia if you can't get a large enough opening into the frontal sinus to drain these well, by only cutting or rasping

forward, whichever method you may prefer to use.

The chronic frontal sinus condition is a puzzle for all of us. I have been, I guess, extremely fortunate in my practice that I have never had a frontal sinus that I was not able to relieve by the intra-nasal operation or, at least, if I didn't, it got away and the other fellow got it, because I have never done an external frontal sinus operation. If I had to do it I would use the Lathrop which is very similar to what Dr. Kuyrkendall described on the operation he did on this patient he is reporting. Lathrop goes a little bit further and removes the septum between the two nasofrontal ducts making a large opening down into the nose, in fact combining or making one large opening of both frontal nasal ducts to drain both sinuses and breaks down the septum between the two sinuses. Through this opening you can curet back into the corners about as far as you can with any of these and I think it is a much better operation than the Killean and these other operations. Lynch has devised an operation described in the Laryngoscope a few months ago, in which he is very radical in removing the floor of the frontal sinus, cleaning out all of the ethmoid cells and making a very large opening down inside the nose through an external opening. I have never seen this done nor had occasion to do it, but his idea certainly is an excellent one to me.

A few months ago I saw Ferris Smith of Grand Rapids, Michigan, the man who has done so much plastic work in the English Army. I saw him graft skin inside the antrum and I have wondered since if that could not be done in Lynch's operation on the frontal and ethmoids and line these cavities with a much better tissue than it has if it is only lined and filled up with a fibrous tissue as it is following all of these radical operations.

In these cranial complications of frontal sinus I have been unfortunate enough to be consultant with two that rapidly proved fatal, one dying a few hours after I saw the case and even after the other man saw it without any chance to do anything. He had meningitis, well marked, before he reached Oklahoma City, and had not been seen by an eye, ear, nose and throat specialist; only been treated by a general man. The other case was a case that developed meningitis, a case of Dr. Ferguson's. I think we will let him report it because it was a very interesting case. In these cases of frontal sinusitis you must be on the lookout for a cranial complication. If you will remember the venous channels are large connecting all of the sinuses, especially the frontal, with the brain, causing

great danger of cranial complications if these are not thoroughly drained.

Dr. H. Coulter Todd, Oklahoma City: I will only say a word on this paper because the hour is getting late, after expressing my appreciation for Dr. Kuyrkendall's paper.

Dr. Kuyrkendall states in his paper that there is usually a thin, bony plate between the two frontal sinuses. I have been taught that this partition is always present unless destroyed pathologically. This is what I have been teaching students. I mention this from the fact that it seems to be rather an important feature bearing upon frontal sinus infections.

In the treatment of these cases I agree with Dr. Kuyrkendall and in the acute cases I want to state that from my own experience, which is rather a sad one, I had the misfortune to lose two cases of acute frontal sinusitis from a very simple operation upon the middle turbinate. Therefore, I am very much opposed to attempting any operation whatsoever in the extremely acute cases of frontal sinus infection. Both of these cases that I mention died from meningitis in less than three days. In treating the chronic cases I guard against, as I said in my paper this morning, the removal of any tissue I can possibly avoid, and the anterior turbinate is left if I can possibly leave it. I approve of Goode's curets and rasps and in my hand they are the most excellent agents. More than that, I think they can be used with as little risk as anything that can be used in the operative work on the frontal sinus because the rasp cuts forward and they do no harm and make a good sized opening. I find the small rasps are easy to introduce and you can get in the larger ones and increase the size of the opening.

Dr. McHenry spoke of the Lynch operation. That appeals as much to me as anything I have read on frontal sinus operations. I believe it is well worth your while to look this up if you have not done so and when you are forced to do an external operation, attempt the Lynch operation.

Dr. T. W. Stallings, Tulsa: Dr. Kuyrkendall's paper dealt with frontal sinus involvement generally, including the acute and chronic, did it not?

In reference to the acute I would like to say that I believe Dr. McHenry suggested along that line the anatomical peculiarity is possibly responsible in a great many cases of a chronic frontal sinus on account of its inability to drain properly. The acute frontal sinus, of course, is due to the various infections and the lack of drainage. I have never met with any difficulty in treating those cases. They have always yielded rather promptly, the majority of them, to the shrinking and suction, fre-

quently enough to keep them well drained, and where those cases are confined to their bed, I keep them sitting up in the day time, part of the time, because that will encourage the drainage and reduce the amount of pain they might have.

In reference to the ocular pain that was mentioned I believe by Dr. McHenry, or referred to in some way—the doctor referred to it in his paper—that is possibly due to the act of convergence with the pulling of the superior oblique on the orbital plate. That pulling will sometimes give you that pain, especially where those patients confined have a tendency to want to read, and I try to advise them to refrain from using the eyes or from any act of convergence as much as possible.

Dr. W. T. Salmon, Oklahoma City: I suppose we have all had a number of these cases following the flu, and my opinion has been somewhat altered in the treatment, especially surgical treatment, upon sinus trouble. The first thing in all troubles is the diagnosis and no one, hardly, has trouble in diagnosing the frontal sinus trouble. They are such pronounced symptoms that you usually understand when they come into the office that you have a frontal sinus trouble. However, there are other conditions in which it may be confusing and you may make a grave mistake.

Recently I had a case that came in and diagnosed their own case as frontal sinus trouble and in making up the history I thought it also had antrum trouble and the X-ray showed a tooth that had never presented itself that was lying cross-wise. Upon the extraction of the tooth this frontal sinus trouble entirely disappeared.

But what I want to speak on mostly in the diagnosis is the assistance in diagnosis,—transillumination, the shadow tests, the X-ray. I have never been an expert with any instrument of that nature in the diagnosis of these cases. The gravest mistakes that I have ever made in diagnosis of sinusitis have been from information furnished by transilluminators and X-rays. I think we should discuss those things. It is nothing uncommon for a man with one of these instruments to walk into the office and stick something under the eye and show you a shadow that looks pretty good, but in my hands they have never been of assistance to me. I have had the prettiest pictures made in the world and I knew I had pus and so forth in the frontal sinus and opening them found normal conditions. I would never have made a mistake if I had depended on the symptoms in opening a place unless the X-ray had lied to me. And I haven't seen, in a long time, a frontal sinus that couldn't be cured without an external opera-

tion. However, unless there are granulations there—I didn't happen to get the cases where there were granulations—they are full of pus. The pus is making the pressure and making the pain. If you can drain this by removing the pressure in the nose or draining the tissues by opening the canal which is a very difficult thing to do. But all my cases got well easier and quicker than those I did with an external operation. If you have an external operation, you still have a condition there that is just as bad as those in which you shrink the tissues and drain them.

Dr. G. Pinnell, Miami: I think differently from the opinion expressed by the doctor—that it is *seldom* necessary to do an external operation. I think when it is necessary it is probably best done by the local anesthetic. I have recently had an opportunity to watch Dr. Bobunchum of New Orleans do his radical Knapp operation modified by himself. He does that by injecting Meckels ganglion, one half of one per cent, injecting the supra-orbital and the inferior and posterior ethmoid and makes a very satisfactory anesthetic. He places the patient in a position most advantageous to the operation and is troubled very little with hemorrhage. It strikes me quite an advantage over a general anesthetic.

Dr. Edward F. Davis, Oklahoma City: I can't explain the production of pain in these cases on attempting to use the eyes, but I am sure it is not due to the superior oblique which is an abductor rather than an adductor. Perhaps there might be congestion of the orbital tissues and the internal rectus and superior rectus in working through cause this symptom in the effort at accommodation and convergence, but certainly it is not due to the superior oblique.

Dr. Kuyrkendall, closing: The main object in writing this paper has been to elicit discussion. I certainly am very grateful to all of you for the discussion of my paper and I have enjoyed each and every one's discussion and I am sure that some valuable points have been brought out that I myself was unable to incorporate in the paper. As I said this morning, I am doubly sorry now that I didn't get a copy of my paper to Dr. McHenry in time for him to give it more thorough discussion than what he did.

As I stated in the first part of my paper, I took up the frontal sinuses only. I mentioned the fact that it was rare indeed to find the frontal sinuses by themselves affected. Some discussion arose as to the point brought out and I brought it out in my paper that it was of the frontal sinuses only that I was speaking; not taking into consideration any of the other sinuses. I have seen one case of gonorrhea of the nose wherein the frontal sinus was in-

volved. I speak of frontal sinuses only; I won't take up any of the other sinuses.

The mucous membrane in the nose, as you know, is of practically the same construction as the mucous membrane of the urethra, so it is possible to have a gonorrheal infection of the nose the same as of the penis. Of course, in your syphilitic infections you may have a general involvement not confined alone to your frontal sinus. The cases that I have seen have been early in the disease. The majority of them have had a certain amount of dizziness and vertigo, the dizziness and vertigo, of course, depending upon the severity of the condition. In the mild cases where there is not much involvement you, of course, do not expect much dizziness, but where there is a great involvement of the different sinuses of the nose, you expect more dizziness in that condition.

Now as regards operation of choice, I leave that up to the operator. Each and every man has his own particular way of handling these cases. I have mine and you have yours. Each has its advantage and I do not think there is any hard and fast rule whereby you can take care of each and every one of these cases. You must meet the condition as you find it and if it is your way or if by an intra-nasal operation you are able to accomplish the same result that I would accomplish by an extra-nasal operation, then I am for you. Go to it on the intra-nasal route. But if you have a case as the one reported here wherein the sinus has been previously operated upon and upon X-ray you find on your lateral view that your sinus is so deep, then your intra-nasal operation will not give you the result that you want. In other words, you cannot—I defy any man—to do an intra-nasal operation on that sinus, the one with the depth as illustrated there. (Referring to X-ray photos shown in connection with discussion.) I defy any of you to do it by the intra-nasal route and get all of the granulation tissue out of it. There was the greatest amount of granulation tissue in that sinus that I have ever seen in any frontal sinus since I have been practicing. This case, as I reported, had previously been operated by the intra-nasal route. The result had been, at first, very good, but due to the depth of the sinus the case had reverted back practically to its previous standing. As a consequence, upon examination with the X-ray we find that the sinus is very deep and that it stands up high and comes out on to the temple—into the temple region. As a consequence I did not feel that I could do an intra-nasal operation on that patient and get satisfactory results. I made the extra-nasal operation and the patient recovered. That was what we wanted and she is still well. The opening as

made in the nose was enlarged to where I could put my finger through the opening. In other words I established adequate drainage and that is what you want in these cases.

A member: That is down into the nose?

Dr. Kuyrkendall: That is down into the nose, yes sir. I closed my skin and after I had made a sufficient opening as I thought into the nose—

A member: Did you take away the floor of the sinus?

Dr. Kuyrkendall: I took away a part of the floor directly over the naso-frontal duct. Each and every one of these operations, as I stated in my paper, are distinct cases within themselves. You must be guided by your own conscience—if you want to put it that way—as to how much bone you shall remove. You may remove a small amount or you may remove a large amount as the case may be.

As regards insects and maggots. I had one case wherein I had maggots in the nasal cavity in each of the sinuses and up into the frontal sinus. These, of course, had found lodgement there—or rather the fly had gone into the nose and had lain the eggs. The sinus was open. The naso-frontal duct was wide open. In that there had been a great deal of destruction and there was adequate drainage after the maggots were removed.

Dr. Todd spoke of the partition between the sinuses. The anatomy teaches us that there is a partition between the two sinuses, but the anatomy also tells us that sometimes this partition may be absent. It also teaches us that sometimes in woman the frontal sinuses themselves may be absent, so it is not constant and I did not mean to infer, Dr. Todd, that in all cases there was a partition nor in all cases there was not a partition. In this particular case that I report the partition was very, very friable. Your position and pressure, I called your attention to that. If you press over the super-orbital you are going to elicit pain. If you press over the ethmoid you are going to elicit pain and I called particular attention to the point where pressure should be made.

As regards wicks for drainage, I agree with Dr. Todd. The wicks are uncomfortable and I hate to introduce them because your patient will complain in spite of the fact that you have used cocaine.

In the very acute cases a great deal of good and very often all that is necessary, as Dr. Strallings said, is suction and the application of the cocaine and adrenelin, keeping the nose clean and using any kind of wash or oily spray or you may even, if you want, patronize one of the advertisements of the A. M. A. and use

the Nichols Nasal syphon. That works very good in cleansing the nasal cavities.

As regards diagnosis, as Dr. Salmon said, I would not rely on the X-ray by itself nor the trans-illumination nor of the symptoms by themselves, but using all of the means at your disposal you may arrive at a fairly definite idea of the condition that you have. This case that I reported had been operated by the intra-nasal route, as I said, and it had not been successful; therefore, the extra-nasal route was used with success.

I stated in my paper that the extra-nasal route, in reply to Dr. Pinnell, was indicated when you were unable to relieve your condition by the intra-nasal route or after having operated by the intra-nasal route your symptoms still persisted. Does that make it clear? I agree with Dr. Davis as regards the pain in the ocular region. Dr. Todd asked the question as regards the most frequent cause. In the acute cases my observation has been that it has been the catarrhal bacillus. After it becomes chronic you have a mixed infection and you may have streptococci, staphylococci, and numerous other symptoms.

Gentlemen, I certainly appreciate the discussion of my paper.

Dr. D. D. McHenry: What I want to say is probably considerably out of order, but there have been two things said in this discussion that I do not think should go by without something more being said about them and I understand we are all here to learn all we can from each other. Dr. Kuyrkendall just said he did external operation because he had a deep sinus. To me that is the indication for doing the intra-nasal operation. I have so much more room to work in there without danger of getting into the brain cavity. Those are the cases I especially choose to do the intra-nasal operation. If I have a very shallow frontal sinus then there isn't room to do much inside without being in danger of getting into the brain. Second, Dr. Todd made the statement that he removed the anterior end of the middle turbinate and his patient died of meningitis three days later and he was against doing intra-nasal work because of that. I can't conceive that you got your meningitis and your patient died within three days from removing the anterior turbinate. That is too soon for it to develop. That is too fast. Certainly your meningitis must have come from your primary frontal sinus infection. I mention these as they impressed me; as I can't agree with them. Although it is considerably out of order for me to raise this question here now, I take it we are here to get what we can out of these things.

SINUSITIS AS SEEN BY THE GENERAL PRACTITIONER.*

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The purpose of this paper is not so much a discourse on diagnosis and treatment of sinusitis, as it is an appeal to the general practitioner to study his cases more closely and familiarize himself with sinusitis and its complications. I appeal to the general practitioner because in the majority of cases he is the one who first comes in contact with them, and, in fact, in many cases, the only one to see them, because less than 10% will seek the advice of a specialist unless referred to one by a general practitioner. The prevalence of sinus disease is realized only when the report of the postmortem examinations are taken into consideration. Skillern gives a list of one thousand seven hundred and one post-mortems from nine different autopsy tables with an average of 31.6% showing sinus suppuration. Tonsils, adenoids and bad teeth have all come in for their share of blame in cases of focal infection, but the sinuses, which are frequently affected, are seldom blamed. I, myself, have been a victim of an undiagnosed case of sinus suppuration; therefore, I have the utmost sympathy with an afflicted person. Considering the number of high class physicians who missed my diagnosis, I am not surprised that the general run of us overlook the more obscure cases.

Maxillary Sinusitis. Acute: At the beginning of an attack of acute maxillary sinusitis, there is a sense of fullness and pressure beneath the eye, and sometimes agonizing pains involving the whole side of the face. In the more severe cases heat, swelling, and redness may occur over the affected cavities. There is a tenderness to deep pressure and mastication is generally painful, the teeth on the affected side feeling as if they were too long and were being crowded out of their sockets. When these symptoms are due to a collection of fluid in the antrum with closure of the natural opening, they may last for several days, and upon spontaneous evacuation of fluid there is a noticeable abatement of symptoms. After this evacuation the pus flows for a time, the course of the disease being marked by periods of retention, during which time there is severe pain which is relieved when the sinus is emptied. Some cases, however, pursue a more or less chronic course from the beginning, there being at no time complete closure of the natural opening with retention, nor any well marked symptoms, except a unilateral catarrh, and general ill health with perhaps an evening rise of tem-

*Read in Section General Medicine, McAlester, May 18, 1921.

perature which may simulate incipient tuberculosis. A discharge of pus from one nostril which smells bad to the patient is always suggestive of antrum trouble.

Transillumination will show positive. This lack of transmission of light is due not only to the presence of pus, but to inflammation of the bone or lining mucous membrane, as it still remains positive after the pus has been washed out.

You are all no doubt familiar with the above symptoms. They are the usual findings and should be easily recognized, and yet we find many patients who have either not suffered enough from an acute attack to cause them to seek medical aid, or having sought medical aid the physician was either too busy or not able to make a diagnosis and let them go with a prescription to relieve pain, hoping that nature would take care of it in a short time.

The treatment in acute maxillary sinusitis is adrenalin spray in the nose, suction, calomel purge, aspirin for pain and rest in bed.

Chronic: The people with chronic maxillary sinusitis are the ones that have my sympathy. They are the ones that go from physician to osteopath and from osteopath to chiropractor, seeking relief; they are told that they have everything from migraine to a displaced cervical vertebra.

The classical symptoms of chronic maxillary sinusitis are, attacks of headache, neuralgia over the affected sinus, tenderness to deep pressure, in short, repeated attacks of acute maxillary sinusitis, with an interval of comparative freedom from symptoms. Now these are the conditions upon which almost anyone can make a diagnosis. The rest of the cases are allowed to suffer because of our own lack of ability to make a diagnosis and are turned out with a prescription for headache.

The symptoms of chronic antrum empyema may range all the way from negligible discomfort to the severest pain and foul discharge. Actual pain in the sinus, however, is usually absent; neither do we find the tenderness on pressure as in the acute form. Headache in some form is a common symptom, the most frequent being supra-orbital neuralgia, although in severe cases, when stagnation occurs, the pain may embrace the corresponding half of the head.

In mild cases the pain is absent or at most takes on a feeling of fullness in the affected region. Often there are absolutely no subjective symptoms and a diagnosis is not made until an X-ray is taken or a needle puncture made.

In moderate cases the pain is similar to frequent attacks of neuralgia and is characterized by its indefinite localization. It is

but rarely confined to the region of the antrum, and usually occurs in the supra-orbital as well as the infra-orbital region. In some cases it is entirely localized in the supra-orbital region, simulating frontal sinusitis. The pain, appearing early in the morning with a periodicity so accurate as to tell the time of day, is usually worse in the late morning and early afternoon, and towards night it disappears with the same accurate periodicity. This is due to the fact that during the night while in a reclining position drainage takes place, and upon arising there is no headache. But soon the sinus begins to fill up and the pain gradually gets worse until partial drainage takes place, upon which the pain is relieved. There is usually a hyperemic condition of the nose on the affected side, which gradually becomes worse as the sinus fills up and recedes when the sinus empties itself.

In severe cases the indefinite character of the pain is still marked, but the feeling of fullness and neuralgia like pains may become almost unbearable. These neuralgic pains are often complained of on the opposite side, over the course of the infra-orbital nerve and in the parietal region. Any condition which causes congestion of the head increases the pain.

The secretion of an antrum empyema appears in the nose free from deformity under the anterior end of the middle turbinate, however, the various deformities and hypertrophies of the nose may cause it to appear most any place. The apparent amount of secretion varies according to the amount of inflammation and the place of appearance. There may be only a small amount of secretion which if it passes anteriorly will attract the attention of the patient, while a large amount may pass posteriorly unnoticed. Crust formation in the naso-pharynx is also a diagnostic sign of much importance. In fact there may be no other noticeable secretion. The crusts are nothing more than dried secretions which have accumulated during the night, and are removed by the usual hawking and spitting. These are sometimes so tenacious that the patient is not able to rid himself of them during the entire day, and sometimes cause gagging or even vomiting. *Hawking, spitting, and clearing the throat is a symptom that should not be overlooked.* Skillern says that unilateral hypertrophy of the uncinate process and the anterior extremity of the middle turbinate is a certain sign of underlying sinus affection, and that unilateral occlusion from hyperemia is always relieved by ridding the sinus of its pathological condition.

Disturbances in the pharynx and larynx are nearly always present. The pharynx may show either an atrophic condition or a gran-

ular inflammation. The affected mucous membrane of the larynx may cause a hoarseness with an irritation, which produces a desire to clear the throat at frequent intervals.

The treatment of the chronic form is left for the rhinologist as we consider that it is too difficult for the general practitioner to successfully carry out.

Frontal Sinusitis.

Acute: The most striking thing about frontal sinusitis is the indefinite nature of its symptoms. The pain is rather difficult to describe and may be of almost any character, but usually begins with a sense of fullness which gradually increases as the disease progresses until it becomes either a dull throbbing pain or a sharp shooting pain, or it may take on the character of both. The location of this pain is rather indefinite and usually affects more or less the entire frontal region, radiating from the sinus as a center. The condition is noted for its periods of quiescence and exacerbations. Almost anything that tends to cause a congestion of the head, such as coughing, blowing the nose or suddenly stooping over, may bring on an acute headache, which may last for several hours.

No secretion is formed at the beginning of the attack, but after two or three days a watery secretion appears, which gradually changes to mucoid, then muco-purulent and finally to purulent, which is sometimes mixed with blood. As the disease recedes the secretions disappear in reverse order from their appearance. The secretion normally appears between the middle turbinate and the lateral wall of the nose, but if the nose is deformed it may appear almost any place, the naso-pharynx being a very common place.

The hyperemic condition of the nose of the affected side may or may not cause occlusion, and this disappears with the healing of the sinus. The majority of cases heal spontaneously after free artificial drainage has been established by spreading or resecting the anterior third of the middle turbinate.

The palliative treatment is adrenalin spray in the nose, suction, calomel purge, aspirin in large doses and rest in bed.

Chronic: Chronic frontal sinusitis is always preceded by an acute infection in which the sinus is without proper drainage. Headache in these cases may be absent, or it may assume all degrees from a mere feeling of fullness to a severe throbbing pain, depending upon the amount of drainage. In well drained cases little discomfort is felt and the poorer the drainage the more severe the headaches. The pain is usually diffuse during the periods of quiescence and located over the frontal sinus in acute

exacerbations. Severe diffuse headaches indicate the involvement of other sinuses. Occasionally the pain is the greatest in the healthy sinus. Tenderness is sometimes present and sometimes absent, and is frequently more pronounced in neurotic individuals with healthy sinuses than in stolid individuals with affected sinuses. Neither this nor transillumination has been of much value in my hands.

A slight oedema of the upper eyelids is sometimes noticed, appearing in the morning and disappearing with the headache later in the day. A hyperemic condition of the nose is present on the affected side in all cases of sinus suppuration. The pharynx is always affected, showing either an atrophic or granular condition. Unilateral pharyngitis is pathognomonic of sinus suppuration.

The following symptoms are common to chronic frontal sinusitis.

1. Severe attacks of frontal headache.
2. Diffuse pain between attacks.
3. Headaches worse during the early morning.
4. Sometimes slight oedema of upper eyelids.
5. The patient takes cold easily and his nose stops up.
6. Catarrhal condition of the pharynx and larynx which causes a hawking, spitting and clearing of the throat.

A diagnosis of chronic frontal sinusitis is often a difficult problem for the rhinologist; and, gentlemen, right here is where I acknowledge my limitations, and when a patient comes to me complaining of a few, seldom all, of the above symptoms, and I am not, after a thorough examination, able to locate his trouble, I send him to a specialist for a more complete diagnosis.

The day is here when your patients will respect you more and have more confidence in your judgment if you acknowledge your limitations and send them to some one who can give them relief.

Summary.

Realizing that in such limited space the subject can be scarcely touched upon, the paper is primarily meant to be an appeal to the general practitioner to inform himself on this subject, not restricting himself to this paper, nor to any one text book, but to study a number of authors and make himself thoroughly familiar with the subject, because about one out of three people that we meet have more or less sinus trouble, the majority of which are never recognized.

Maxillary Sinusitis

Symptoms of Acute Form:

1. Feeling of fullness and pressure within the Sinus.

2. Severe pain in whole side of face.
3. Tenderness to deep pressure.
4. In severe cases heat, swelling and redness over the affected area.
5. Painful mastication.
6. Presence of a secretion of varying character.
7. Transillumination and X-ray will show positive.

Treatment of Acute Forms:

Adrenalin spray in the nose, suction, calomel and aspirin.

Symptoms of Chronic Form:

The classical symptoms are those of repeated attacks of the acute form, with intervals of comparative freedom from symptoms.

The atypical symptoms are:

Light Cases:

1. Pain and tenderness in sinus absent.
2. Divers forms of headache common, the more frequent being supra-orbital neuralgia.
3. Secretions slight, the usual form being hawking, spitting, and clearing of the throat early in the morning.
4. Chronic catarrh of pharynx and larynx with possible bronchitis.
5. Transillumination and X-ray usually positive.

Moderate Cases:

1. Attack of neuralgia at intervals.
2. Indefinite location of pain, but rarely confined to region of antrum, and may be confined to region of frontal sinus. Headache is worse in the late morning and early afternoon.
3. Secretions slight.
4. Chronic catarrh of larynx and pharynx with possible bronchitis.
5. Moderate hyperemia of nose on affected side.
6. Transillumination and X-ray usually positive.

Severe Cases:

1. Agonizing attacks of neuralgia at varying intervals.
2. Indefinite location of pain still present.
3. Secretion after attack usually purulent, tinged with blood. Between attacks the secretion is the same as in the mild and moderately severe forms.
4. Marked hyperemia of nose on the affected side.
5. Chronic catarrh of larynx and pharynx with possible bronchitis.
6. Transillumination and X-ray positive.

Treatment of Chronic Form:

The treatment of all forms of chronic Maxillary Sinusitis is left to the specialist because we consider it too difficult for the general practitioner to carry out successfully.

Frontal Sinusitis.

Symptoms of Acute Frontal Sinusitis:

1. Sense of fullness and pressure in frontal region increasing to neuralgia.
2. Indefinite location of pain.
3. Tenderness upon deep pressure.
4. Periods of quiescence and exacerbations.
5. Secretion absent at first, then appearing watery in character and changing to mucoid, muco-purulent and purulent.
6. Hyperemia of nose on affected side.
7. Transillumination is of little value.

Treatment of Acute Frontal Sinusitis:

The treatment consists of adrenalin spray in the nose, suction, calomel purge and large doses of aspirin.

Symptoms of Chronic Frontal Sinusitis:

1. Diffuse pains during periods of quiescence.
2. Pains over frontal Sinus during acute exacerbations. (Severe diffuse headache signifies the involvement of other Sinuses.)
3. Headache worse during morning hours.
4. Sometimes slight oedema of upper eyelids.
5. Hyperemia of nose on affected side.
6. Catarrhal condition of pharynx and larynx with possible bronchitis.

Treatment of Chronic Frontal Sinusitis:

The treatment of chronic frontal sinusitis is too difficult for the general practitioner to carry out successfully.

Diagnose your case, acknowledge your limitations, and send your patient to some one that can give him relief.

Discussion.

Dr. P. F. Erwin, Wellston, Oklahoma.

We are concerned more with the diagnosis of these conditions, as general practitioners, than with the treatment, and the symptoms are very important because of the fact that, if the diagnosis is not made, the treatment cannot be applied. When we consider the damage which may result from a sinusitis that is not diagnosed and treated, such as the effect on the heart which may not be apparent until many years later, we can see that an accurate diagnosis is important. This trouble frequently begins with an infection of the tonsils and adenoids and the general practitioner thinks it unnecessary to remove them. This may be correct but they should receive our careful attention.

Just a word with reference to the diagnosis, which Dr. Gastineau has already so ably discussed. We know that in children the frontal sinus does not exist and does not appear until the child is eight or nine years old. But the ethmoidal and sphenoidal sinuses may become infected, if free drainage from the tonsils is stopped and the beginning of a chronic sinus-

itis made possible. Many of these cases may be diagnosed as neuralgia or neuritis and if the antrum is infected it is easy for the infraorbital nerve to be involved, located as it is in a groove in the roof of the antrum, and we diagnose the condition neuralgia or neuritis. These cases need the treatment of a specialist instead of a prescription for neuralgia which they so frequently receive.

THE IMPORTANCE OF EARLY DIAGNOSIS IN TOXIC GOITER.*

R. M. HOWARD, M. D.
Oklahoma City, Okla.

It is now pretty generally recognized that we have two types of goiter that give rise to toxic symptoms, i. e.; the true hyperplastic, or exophthalmic type and the adenomatous type, both when present giving a rather similar picture, but each differing markedly in its history of development. The first representing a true hyperplasia of the gland, develops in a few weeks or months time, most often in patients who have not previously had a goiter. The symptoms of hyperthyroidism gradually become noticeable. In a few months time they reach their height. If the patient survives, the toxemia gradually subsides, only to be followed by other waves, each leaving its permanent damage to the vital organs. From the beginning the patient probably never returns to normal in a large per cent of the cases. Tachycardia, tremor, nervous excitability, vaso-motor disturbances, loss of weight and strength, the exophthalmos of varying degrees are the prominent symptoms. The gland, while usually noticeably enlarged, may at times be so little changed in size as to be difficult of recognition. The average age of its incidence is thirty-two years, although it ranges from early childhood to advanced years.

In the adenomatous type a different clinical course is presented. Toxic symptoms occur in these cases in patients who have had, as a rule, for a long time an apparently innocent goiter, the average time of the appearance of symptoms being from fourteen to twenty years after the enlargement was first noticed. The symptoms do not as a rule come on in acute crises, as they do in the exophthalmic type, but develop more slowly and progressively. Aside from this, and the absence of exophthalmos, the symptoms are very similar to those of the hyperplastic type, although the cardiac symptoms in the adenomatous type seem to be more prominent and there is usually a slight rise in blood pressure. Pathologically

they differ in that in the former there is a true hyperplasia of the normal secreting portion of the gland, while in the latter there is hypertrophy of the tissue in the new growths or adenoma.

For the purpose of this discussion then we may proceed on the assumption that exophthalmic goiter and the related condition, toxic adenoma, are characterized by an altered function of the thyroid gland, principally an increased secretion, and that this increased secretion profoundly affects certain of the vital organs, resulting if allowed to proceed, in degenerations that will finally prove permanent.

The degree of this toxicity is not always easy to determine, the degree of degeneration that has taken place is difficult to estimate, and the resistance of the patient to any procedure for his relief is uncertain. These questions have not been answered very definitely by any of the writers on this subject. All agree, however, that the earlier the toxicity can be determined the easier these questions can be solved.

Early tuberculosis and certain nervous affections, notably the so-called neurasthenias, will offer the greatest difficulties in their early differentiation from thyro-toxicosis.

Through the work of numerous investigators, it has been determined that the thyroid gland controls the energy output of the body, that the oxygen consumption and the corresponding carbondioxide output is an index to the amount of energy being produced. In other words that the metabolic rate of an individual depends on thyroid activity and that this can be measured by determining the intake of oxygen and the output of carbondioxide.

It has been proved from observations that thyroid activity is the only factor, aside from acute fevers, certain leukemia, pituitary disorders and muscular exertion, that at all affect the basal metabolic rate. For the past few months we have been using this test on all of our cases and have found it invaluable in making an early diagnosis and in differentiating these from the above mentioned disorders, as well as in determining the degree of activity of the gland in the unquestioned cases.

Goetch, (1) basing his analysis on Cannon's experiments, believes that in hyper-thyroidism there is a sensitization of the sympathetic system and, therefore, a hyper-sensitiveness to epinephrin. He has suggested the injection of the latter, and the recording of the succeeding variations in pulse and respiration rate, blood pressure, vaso-motor and psychic phenomena, which constitutes a reaction whose severity is proportional to the degree of hyperthyroidism.

*Read in Section Eye, Ear, Nose and Throat, Oklahoma State Medical Association, McAlester, May 18, 1921.

This test in his hands has proven valuable in differentiating between certain obscure cases of exophthalmic goiter, or of thyroid adenoma with thyro-toxicosis, and neurasthenia and early tuberculosis.

In using this test routinely on those cases subjected to the metabolic test, we have found that it does not always agree with the metabolic findings. There has not been a sufficient number of cases as yet though on which to base conclusions.

In dealing with these goiters, much will depend on the condition of the patient when he comes under observation. The promise of relief and the hazard of the procedure depend on a careful estimation of the degree of the toxicity, and the damage that has already been done. In the exophthalmic cases rest does much to alleviate the symptoms, and while under this procedure many cases apparently subside, but few are permanently well. Nearly all later have recurrences of severe activity or develop changes in the heart and nervous system as a result of a persistent low grade toxicity. We have heard much about the X-ray therapy lately for this condition. Frazier (2) says in a recent article "With regard to the X-ray therapeutics in general, all the reports which I have seen deal in generalities and do not give end results. The writers of these reports would lead us to believe that the results are almost generally good and, one would infer, better than the results of surgery. The insinuation is made also that X-ray therapy is without danger. To this, however, I take exception. In the first place Holmes and Merrill tell us that the gland may be destroyed and a state of hypothyroidism produced if treatment is pushed too fast. The changes go on in the gland after treatment has been discontinued. Secondly, the toxemia may be increased to a dangerous degree by the first treatment, and cases have been recorded where the reaction following Roentgen therapy has been fatal. Thirdly, the increase in connective tissue makes subsequent operation more difficult."

In the earlier and milder cases surgery is the safest and surest treatment by far, and the results are uniformly good. In those of severe degree careful preparation is necessary to make the procedure permissible. Rest, preliminary ligation, injection of the gland with hot water or quinin-urea solution, all at times must be taken advantage of. The height of a wave of activity as indicated by the high metabolic rate must be avoided. All of these cases, if they can be controlled, can by careful management as above outlined be made fairly safe surgical risks.

The toxic adenoma, to my mind, are not curable by medical treatment, neither are they

favorably influenced by the X-ray, or injections of various sorts. From the first they are surgical, and never more favorably so than when first seen, except in those cases of long-standing where too many permanent degenerations have taken place. A period of rest in this type of hyper-thyroidism is often advisable before operation. Late toxic adenoma while offering fewer difficulties at operation are no less grave surgical risks than the exophthalmic type. In both of these classes of trouble we see too often patients who have carried the activity too long for relief by any procedure. Operation should be avoided in such instances.

A thyro-toxic patient's condition is the factor that will determine the treatment. The most probable estimate of this may be gained from points in the history, the variation of body weight, the elevation of the pulse, and metabolism.

An early recognition of toxic goiter, be it of the hyper-plastic or toxic adenomatous type, will very greatly decrease the difficulties that one must solve to make these cases safe for surgical procedure. The long period of invalidism, the permanently crippled organs, the operative mortality, each can be reduced to a minimum by being alert in our diagnosis. Those individuals with hyper-thyroid activity are living too fast, they are reducing their normal expectancy in just the proportion of its degree and the length of its existence.

The cases submitted to surgery early are not only easier and safer to do, but make better, more permanent, and more rapid recoveries. We are being called on too often to treat the advanced cases, many of which have been under medical care for months. It is not unusual to have patients come in seriously toxic who have recently been subjected to other surgical procedures, hoping thereby for relief. These were commendable procedures under ordinary circumstances, but extremely dangerous to the lives of patients in such condition, patients whose compensation is barely sufficient to carry them on. Thyro-toxic patients stand any operation badly. The role of focal infection in its relation to thyro-toxicosis has much to support it from a causative standpoint, but attempts at its relief in the face of severe toxicity should not be made and have no pathologic or therapeutic basis to support them. Their correction had best follow, rather than precede the measures instituted for the relief of the thyroid activity.

In conclusion, permit me to say that there is no more serious operation than the surgeon is called on to do than that of operating on late cases of toxic goiter, while early in the course of the disease the technical difficulties

are fewer and the mortality rate correspondingly lower.

(1) Goetch, E.—Newer Methods in Diagnosis of Thyroid Disorders, Pathological and Clinical. N. Y. State J. M., 1918.

(2) Frazier, Chas. H.—The Management of Toxic Goiter from the Surgical Point of View. Annals of Surgery, Aug. 1920.

Dr. L. M. Westfall, Chairman, Oklahoma City: The discussion of this timely paper has been interesting indeed and I think oftentimes the real extra value comes from the discussion. I hope in the following papers that there will be free discussion. There is a subject in which we, as specialists, are very much interested; more so now than we have been in the past for the reason that we are coming to realize its importance as never before. I refer to hyperthyroidism and that, in connection with our work, especially in tonsil work, I feel is extremely important. Dr. Howard, a general surgeon of Oklahoma City, has done some very excellent work along this line and I feel that his experience and conclusions in regard to this work would be of a good deal of value to us, hence I asked Dr. Howard to present a paper before our section today and he has very kindly consented to do so.

Discussion.

Dr. A. W. Roth, Tulsa: Mr. Chairman and gentlemen: In discussing this excellent paper of Dr. Howard's, I am a little at a loss, not doing the surgical end of goiters nor treating surgically, and his paper, while it is early diagnosis, does deal a good deal with the treatment. There is no doubt whatsoever that the early diagnosis in hyperthyroidism, as in any other disease, is desirable, and that it is made in the great majority of cases early and, with the tests that the doctor pointed out, should be made in practically all cases in their very beginning. There is a great difficulty, though, even after your diagnosis is made, in bringing these people to an operation. The time has gone on and people have let their goiters grow and they have that idea yet.

In exophthalmic type the symptoms are severe and more shocking to the patient at the incipient stage and consequently may come to an operation more quickly, but in the adenomatous type they have carried this old lump around on their neck so long they are really lonely without it and the symptoms have to become quite severe before they are willing to submit to operative procedure. In point of treatment the doctor has had wonderfully good results in his surgery. The X-ray man is just as sure as the doctor and he attributes about fifty per cent of surgical cases as curable cases and about ninety per cent of X-ray cases

curative. I believe and understand in the very toxic cases the Mayos subject them to X-ray before the operative procedure, to reduce the toxic condition and if that will reduce the toxic condition and bring an inoperative case to an operative condition in a week or ten days or two weeks, if that treatment was prolonged why would it not result in a cure? Again, if these cases are as they say all bad surgical risks and the X-ray is resulting in such good recoveries, why isn't it well go to on with this X-ray until you are sure your case will not respond entirely to the X-ray? The cry, I think, is not very strong for the operative procedure of the exophthalmic type and is growing less so as time goes on. The influence of the tonsils, the lingual tonsil and the vinous region on the goiter certainly is marked. I notice that some of the X-ray men claim that the treatment with X-ray is not as satisfactory unless the vinous region is also treated; that if by treating the goiter from the four different directions, cross-treating in each direction for about four minutes, that they claim the likelihood of danger is very small, if at all. I think that Shamreau and Sloiter both recommend treatment of the lingual tonsil even if there is no evidence of inflammation in the tonsil itself; that that treatment results in, first, a softening of the gland and then a shrinking in its size. As far as the danger from X-ray or from surgery is concerned, it is like Dr. Todd spoke here a moment ago, it is absolutely in the hands of the man who does the work. His experience and his knowledge and his technique are the things that make it dangerous or not dangerous.

Dr. D. D. McHenry, Oklahoma City: Mr. Chairman, I don't know anything about toxic goiter. Since it has been called to our attention that infections of the mouth may be partly the cause of some small enlargements of the gland becoming toxic, or even partly the cause of some enlargements of the gland, I have made it a rule to examine the thyroid gland when examining tonsils, and if I found a slight enlargement of the gland without any toxic symptoms, making that one of the reasons why those tonsils should be removed. I think it was one of Mayo's men who, a year or two ago in discussing a tonsil question, gave that as one of the reasons why tonsils should be removed, as a preventative of a slight enlargement of the gland becoming larger or becoming toxic. Of course, the removal of the tonsil would also apply to the removal of infected teeth or any other infection about the mouth and I think this is the thing we should take into consideration and, as I say, call it one of the reasons why that infected tonsil or teeth should be removed.

Dr. H. Coulter Todd, Oklahoma City: Mr.

Chairman, I personally appreciate Dr. Howard's paper and I agree with him very thoroughly, first, from the fact that I am bound to because I do not know much about the subject and, secondly, because the paper sounds very reasonable to me. I am going to discuss it from just one angle and that is the standpoint of operation in case of toxic adenoma. There is no question in my mind about the serious possibilities attendant upon such operations because I have had the unfortunate experience of having a patient die within a week from toxic goiter following a tonsil operation which I did. Notwithstanding the fact that I was warned before operating on the patient that I had better not do it by a man in whose judgment I had a good deal of confidence. Unfortunately at that time I did not know the seriousness of disturbing one of these patients during the height of the wave of activity Dr. Howard spoke about. Some of these patients in this toxic condition seem to be just barely getting by and it is surprising what a little shock it often takes to destroy that balance. My patient referred to was operated on with the least shock and operated rapidly, under local anesthesia and declared it to be painless. She was in splendid condition for about thirty-six hours after operation, when all the symptoms became aggravated, the pulse rapid and just simply went on increasing in rapidity until the patient died with every evidence of toxic goiter. So I would urge, in view of this case and other experiences, that when we have a case that presents itself to us as being a case of toxic goiter, if we are not competent to pass judgment and know the condition of that patient, we ought to pass that patient over to somebody who is able to recognize the real condition of the patient before we attempt an operation, even though it may be considered a very simple operation.

In view of the fact that we have tests now that are reasonably reliable I do not think any man is justified in submitting a patient with toxic goiter to an operation of any kind unless they understand their condition thoroughly. Personally, I am more than glad to hear Dr. Howard's paper and it is my purpose to endeavor to understand this condition better. I believe it is going to weave itself into a great many conditions, medical and surgical, that we do not associate it with today.

Dr. E. S. Ferguson, Oklahoma City: I enjoyed Dr. Howard's paper very much. I think we are fortunate in having this subject presented so well at this time.

I have made it a practice for some time to examine the thyroid gland in practically all cases of patients that come to me for an examination of the throat or with the idea of having tonsils removed. I have never re-

moved a pair of tonsils knowingly in a case of goiter that showed hyperthyroidism. Not doing that particular line of work myself, I refer these cases for examination, even though the toxic symptoms are practically negative, in order to avoid the possibility of danger in any operative procedure that might be used. If there is a slight enlargement of the gland without any toxic symptoms, I think the tonsils, probably, can be safely removed or teeth can be removed in order to get rid of infections that may have something to do with the enlargement of this gland without having a true or typical goiter condition.

The exophthalmic goiters have been the ones that have been disappointing, following surgical procedures, in my observation. The majority of cases that reach the stage of an exophthalmos, apparently, are not greatly benefitted so far as exophthalmos is concerned by the removal of this gland. I haven't looked into this subject enough to make that statement a positive one from the standpoint of other men, but I can do so from personal experience. The exophthalmos in a great many cases has continued to increase in my observation. I have only one case that I can recall where there has been any lessening of the exophthalmos and in that one only to a very slight degree. I would like to hear further from Dr. Howard touching on that subject in his closing remarks.

I think his statement regarding the early diagnosis of these cases and early procedure of whatever is necessary to be done, is of great importance. If these cases can be operated and relieved before they reach that state of organic changes in other parts of the body, they are favorable cases in which you can expect a cure. Unfortunately, as Dr. Roth has stated, the patients usually object until the symptoms are so marked and their distress is so great that they must have relief. In quite a number of cases in my hands, the first complaint has been a slight fullness of choking in the throat or a feeling or choking, complaining that there must be something in the throat because of the distress. No toxic symptoms, only they will have paroxysms, sometimes, of choking and almost constantly feel a fullness in the throat. Some of those cases may be relieved without operation, but they should be examined early to see whether or not they are developing and beginning a typical goiter condition. The examination should be carried on that Dr. Howard has mentioned to give you a rather definite idea of the functioning of this gland.

Dr. Howard, Closing: I thank you for the able discussion of my paper. Dr. Roth spoke of the difficulties of inducing patients to have operations and I think that is true. We do

have a great deal of difficulty in inducing patients to have operations for goiter. They would much rather have something else done that even promises but a little relief if they feel there is any chance at all of getting it. However, the people are becoming a little better educated about goiter. A good many of these cases are to be found in each community and I think it is going to be easier to get these patients to submit to treatment for this condition. In fact the laity hears so much about goiter that we are having a lot of patients coming in who don't have them at all but who insist that they must have something the matter with the thyroid gland because they have had one or two neighbors who had been operated for goiter and they themselves believed that they have similar symptoms.

Dr. Roth also spoke of the X-ray for the toxic cases. We do use that a good deal in the preparation of these patients for operation. It has long been the custom of the doctor in the exophthalmic type to expose the thymus to therapy before operation. We are not just absolutely certain of our basis for this, however. In a recent article Cheever produced in the *Annals of Surgery*, I think it was, he advanced the idea that perhaps an enlarged thymus wasn't a bad thing to have in these cases, and cited three cases. I think it was, that died following operation on whom post mortem was held and it was found that there was practically no evidence of the thymus gland at all, and he brought up the point as to whether or not the thymus may act somewhat as a protecting agent. In the exophthalmic cases the majority of the men believe that the thymus should be exposed to therapy before operation.

I emphasized, perhaps, a little too much the X-ray therapy of these cases. I did so largely because of the extreme claims that the X-ray men are making along this line, and I feel it is just a little uncertain and the extent or the limitation that they can put on the amount of change they produce in the gland is not definite.

Not long ago I operated a case that, on microscopical examination proved to be carcinoma of the thyroid. I promptly had radium and X-ray used on this patient. She dropped out of sight and I didn't see her for a few months and I met Dr. McHenry one day and he said "Have you seen so and so lately?" "No." "Well, things are not all right with her." I called her up right away and had her come into the office and she showed every evidence of a hypo-thyroidism. This shows that the X-ray and radium does have an effect on the thyroid gland. I had removed a portion of the gland and the little of it left had been practically destroyed by the X-ray

and radium. I put her on thyroxin and in two weeks time she looked like a different individual. She will probably have to go through life taking a little thyroxin right along. But that does illustrate that we get a very marked effect from radium and X-ray on the thyroid gland and, perhaps, when we have learned to limit it and to know where to stop, it may be of more practical value than it is today.

Dr. Todd spoke of the mortality of doing tonsil operations in severely toxic cases. I think that is an important point. As I said in the paper, these people don't have much in reserve. It takes about all they have to keep them going and if you submit them to an operation like the removal of the tonsils, especially without preparation, as it is necessary for us to do in these severely toxic cases to operate on the thyroid, I think it is an extremely dangerous procedure and I question the value of the procedure at that time. In other words, we admit that the focal infections may have something to do with the development of the condition originally, but doubt whether a removal of that focal infection can influence the case if it is severely toxic.

Dr. Ferguson spoke of the disappointment in surgery of the exophthalmic type of thyroid and he is entirely correct in it. While we get about eighty per cent of cures in these cases, of the other twenty per cent some of them are not aided very much and the others are improved. That percentage is better today than it has been in the past. It has been a problem to know how much thyroid tissue to remove in these cases. For a while we thought that the removal of one lobe was sufficient. Then we removed one lobe and the isthmus. Then a resection of both lobes with the isthmus and now, in the exophthalmic type, most of the operators are removing practically all of the gland. They are leaving just a little thin layer of thyroid tissue on the posterior capsule in front of which we must always stay in order to be safe as far as the nerve and para-thyroids are concerned. By doing that we are getting better results.

Dr. Ferguson spoke of the exophthalmos persisting. It unfortunately does in a large number of these cases and particularly will you notice that it often increases during the few weeks following operation. I think this is due to the extra amount of toxicity that the patient gets following the procedure. Definitely it is not known just why you get the exophthalmos. We know that muscular weakness is one of the most permanent symptoms we get in a toxic goiter and particularly the exophthalmic type and it undoubtedly is largely due to that.

I did not take up the type of anesthetic

in doing this work. I believe in the severely toxic cases they should all be done with local anesthesia and I believe if you are going to carry out the removal of tonsils or infected teeth, in any of these cases that are mildly toxic, then that local anesthesia is the thing to use. Don't subject these patients to a general anesthetic.

There is one other thing I think is of importance that I didn't bring out in the paper and is not directly related to this subject and yet it is, indirectly, too, and that is the thyroid of adolescence. Much work has been done along the line of these types of goiters of late and it is believed that we can, by treating them, prevent the development of active thyroids later in life. This work hasn't been carried on long enough for us to be sure of that. The work has been done principally in Cleveland and Boston in examining the school children—the girls about the age of puberty. We all know how often we see those youngsters with enlarged thyroids. By putting these patients on sodium iodide, 5 to 7 1-2 grains three times a day for six weeks in the spring and in the fall we believe that practically all of them will disappear. I have a number of them that have disappeared after the first six weeks of treatment and the theory is if we get rid of these goiters promptly in adolescence we will perhaps avoid goiters later in life that may be troublesome. I thank you. (Applause).

POINTS OF INTEREST IN THE LOWER UTERINE SEGMENT AND CERVIX.*

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Introduction.

About the only introduction I wish to make to the subject matter of this paper is; that it is old; so old that it is new, and I only hope, perchance, to revive a worth-while idea. Sometimes in our attempts to keep up-to-date in practice we forget or for the moment crowd out of mind things most important and sometimes the scientific and practical gives way to the popular fad.

It is interesting to note that our present knowledge or conception of the lower uterine segment and cervix is the piecemeal accumulation of investigators and clinicians for a period of over two hundred years and that even now we find the most recent text books and clinical reports differing to the point of confusion. The knowledge of the anatomy and of the physiology of this portion of the pregnant uterus has grown apace, however, and as the anatomy, both gross and histological, has

been very thoroughly worked out and physiological research seems to have proven most of the activities of the uterus in pregnancy and labor, it is now up to the obstetrical clinician to apply these facts, and it is only possible for him to do so by having a clear conception of them.

The uterus in the non-pregnant state is anatomically divided into a fundus and cervix, and it is the changes due to pregnancy that develops what is termed the lower uterine segment, which is a distinct portion of the pregnant uterus between the fundus and cervix. However, according to Williams, "Veit demonstrated that for several millimetres above the internal os the lower part of the uterine cavity is represented by a small canal which he designated as the 'Eng Pass' (narrow passage) and from which he believes the structure in question developed."

Anatomical Points.

In taking up the anatomy let us remember that the embryological origin of the uterus is from the Muellerian ducts which in the embryo grow downward, unite between the embryonic ureters, and form the vagina and uterus. Then as the foetus develops the fundus pushes up under the peritoneum of the pelvis between the bladder and rectum, but in closer relation with the bladder so that anteriorly the peritoneum does not fall as low as it does posteriorly where it dips down to form the pouch of Douglas and falls between the utero-sacral ligaments, almost coming in contact with the posterior vaginal fornix. Latterly the peritoneum is reflected off on the broad and round ligaments. Note that all the uterine ligaments and virtually all what we are calling the lower segment and cervix are extra peritoneal and at the end of pregnancy we find only a small portion of the posterior aspect of the lower segment actually in close contact with the peritoneum. Anteriorly the development of the fundus during pregnancy lifts the utero-vesical fold of peritoneum so that as a pouch it is practically obliterated and thus the anterior aspect of the lower uterine segment becomes separated from the bladder, and the peritoneum is so loosely attached that it can hardly be considered as a covering or a layer of the uterine wall at this point. This is a point of practical importance in doing either a vaginal or extra peritoneal Caesarean section. In the vaginal section there is no difficulty in separating the bladder from its attachment to the cervix and the incision necessary does not reach near to the peritoneum if the bladder is held up out of the way.

The possibility of extra peritoneal supra pubic section due to this separation and laxness of the peritoneum in the region of the

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anterior aspect of the lower uterine segment has theoretically removed the objection to section in the infected and potentially infected cases. While the idea originated over a hundred years ago not many surgeons have undertaken this operation until recently and are now doing modifications of it; that is, sectioning the lower uterine segment but invading the peritoneal cavity; thus taking advantage of this changed relation of the peritoneum to the uterine wall.

Whether these operations have advantages over the classical Caesarean section, will not be discussed in this paper, as I desire to mention later a phenomenon of the uterus during labor which if observed and practically applied would reduce infections to a minimum, and in the absence of infection, the Classical section I believe is the one of choice, anatomically and physiologically considered.

As the uterus is the result of the union of the embryonal fallopian tubes we find its three muscular layers correspond numerically with the muscular layers of the tubes but their distinctness of arrangement is lost and the middle layer, whose fibers are circular in the tubes, is developed into a very complex muscle in the pregnant uterus contributing fibers to both external and internal layers in the fundus and combining with the external layer in the muscular structure of all the ligaments. This is particularly noticeable in the make-up of the broad and utero-sacral ligaments. Only in the lower segment and cervix do we see it maintaining a generally circular arrangement of its fibers. In the lower segment before the onset of labor its contribution to the uterine wall is liberal, but in the cervix proper it is scant. The middle layer supports or is permeated by the large blood vessels or sinuses which are so plentiful in the pregnant uterus. Helie of France noted a figure of eight arrangement of the fibres of this muscle to which he attributed the power of constricting these sinuses, and thus acting as ligatures to prevent their emptying when the uterus is in a state of contraction. The uterine souffle heard best over the lower segment suggest the clinical importance and volume of blood carried by these sinuses. One of these sinuses marks the upper border of the lower uterine segment and the location of the so-called contraction ring.

The external layer, over the lower segment and supra-vaginal cervix, is thin and its fibers while inter-lacing, maintain a generally longitudinal direction and contribute to the ligaments. Reynolds (2), in 1911 published an article relative to the clinical importance of the uterine ligaments and their musculature, in which he says, "This musculature exists in especially important quantities in four situa-

tions, throughout the utero-sacral ligaments, at the bases of the broad ligaments, along the upper edges of the broad ligaments and in a sheath underlying the bladder and attaching the cervix of the vaginal vault to the descending rami of the pubes."

The internal layer is also thin and supports the mucous membrane and acts as a buffer between it and the more active middle layer. It also furnishes a constrictor bundle around the internal os, which marks the boundary between the lower uterine segment and cervix.

The mucous membrane of the lower segment and the cervix is in direct contact with the inner muscular layer and down to within about a half to three fourths of an inch of the external os is the same as that of the fundus, viz; columnar ciliated epithelium, while in the rest of the cervix it is similar to that of the vagina or stratified squamous epithelium.

Above the internal os the mucous membrane is smooth while in the cervix it is in folds, which have a palmate or arbor-vitae arrangement, that is, there is an anterior and posterior system of these folds, each having a longitudinal ridge from which branch folds extend obliquely upward and outward around the lumen. The glands of the cervix are of the racemose type and penetrate deeply into the connective tissue walls of the cervix.

The nerve supply of the cervix and lower segment is cerebro spinal from the sacral plexus and sympathetic from the various ganglia of the abdominal and pelvic regions.

Surrounding and permeating the lower segment and cervix particularly during pregnancy is a profuse supply of lymphatics which, in relation to infections, adds another clinical point of interest to this region.

At the risk of seeming to presume that the anatomy of the lower uterine segment and cervix is not commonly known or understood, I have gone over it briefly. However, I have done so only to emphasize points which I think are most important and interesting clinically in the physiology of this portion of the birth canal.

Lower Segment Development.

The lower uterine segment becomes differentiated from the fundus or upper segment and the cervix at varying periods, after the beginning of gestation. It is noticed earlier in multiparae than in primiparae and I presume its development would also be influenced by the type of uterus. The early beginning of its development is shown in the low implantation of the placenta in placenta praevia, and the fact that its frequency is greater in proportion in multiparae than in primiparae shows the earlier dilatation of the isthmus in the former.

Physiology and Dilatation.

That portion of the middle layer of the musculature of the uterus which surrounds the isthmus and, after its development, the lower segment is virtually a sphincter muscle. The generally circular arrangement of its fibers has been noted. It develops as the rest of the muscle-tissue of the uterus does, and dilates from above down-ward to accomodate the growing foetus, playing its part, with the rising fundus, in changing the spherical form of the uterus to the ovoid form. It is the superior or internal sphincter of the uterus while the musculature and connective tissue of the cervix is the inferior or external sphincter.

The so-called false or preliminary pains, toward the end of pregnancy, aid in this dilatation and when true labor begins all but the lower fibers of this sphincter are dilated. They soon give way and begin to be pulled upward between the internal and external layers of the uterine wall, over the presenting part of the uterine contents, which are in turn being subjected to intra-uterine pressure by the contractions and, as the internal os of the cervix, being no longer reinforced by the circular fibers of the lower segment, begins to dilate, the presenting part follows the course of the least resistance and thus becomes an added force to the process of dilatation.

The beginning of dilatation of the internal os is the beginning of effacement of the cervix and when the fusiform shape of the cervical canal is changed to a bowl shape, effacement is complete. Frequently in multiparae, and occasionally in primiparae, due to a weakness or laxness of the sphincter of the lower segment, effacement of the cervix may be complete before the onset of true labor pains and may occur without engagement of the presenting part of the foetus.

Bandl's Ring in Relation to Dilatation.

True dilatation of the external os, as a result of the forces of labor, begins with the rise of the contraction ring of Bandl or retraction ring as English writers, I think, are pleased to call it. This rising of the contraction ring can be noted, beginning just above the pubis and in all cases when the head or breech enters the pelvis the dilatation of the external os is in direct proportion to the distance of the ring above the pubis.

This is to me one of the most interesting phenomena of labor. When the ring can be felt to be a finger's width above the pubis, there is what is known to the obstetrician trained in vaginal or rectal examination as one finger dilatation of the cervix or external os, and when the ring is two fingers above the pubis there is a corresponding dilatation of the cervix and when the width of the average

hand or four fingers measures the height of the ring, dilatation is complete. Such is the normal action of this internal sphincter as shown by its rise as effacement and dilatation of the cervix occurs.

Irregularities of Ring.

The action of this ring is also significant in abnormal cases, and irregularities. A sudden or oblique rise, will be noted in transverse presentations when a shoulder, an arm, or a leg, presents, and does not fill that portion of the lower segment within the pelvis, thus permitting it to collapse and be pulled up suddenly, or at an angle, because of not being held out on all sides against the pelvis, as it is in normal head or breech presentations. In such abnormalities of presentation a case of contraction ring dystocia, or so-called hour glass contraction, may be precipitated. In this connection, note that there is a reflex circuit in the nerve supply of the lower segment and cervix, and that functionally the muscle tissue which goes to make up the contraction ring is primarily that of a sphincter. Then let us recall the effect, reflexly, of irritation and pain upon other sphincters; as hemorrhoids upon the sphincter ani and ulcer upon the pylorus, and we have an explanation of contraction ring dystocia, for we know that the irritation produced by frequent vaginal examinations, traction upon or lacerations of the cervix, and mal presentations and positions are conducive to its production. It is also known that this dystocia occurs often in the hysterical or unstable nervous type of woman and that in that type of woman the reflexes are always more sensitive or exaggerated.

I will not attempt to discuss further the action of the contraction ring under abnormal conditions, as I wish to emphasize particularly the value of becoming familiar with its normal action.

When dilatation of the cervix is complete the site of the retraction ring is more prominent and easily demonstrated and below it can be felt the thin walls of the lower segment in contrast to thicker and firmer musculature of the fundus.

Most text books on obstetrics tell us that this ring can be detected best when the uterus is in a state of contraction; that is, when the pain is on, but my experience has been that it is more easily distinguished just as the contraction begins or ends, and in primipara or in women who have a uterus of good tone, it is even more easily determined between pains when the uterus is at rest. My explanation of why I have found this the better time to locate the ring is, that when the uterus is in a state of contraction that portion of the lower

segment below the ring is under tension both from the retraction of the ring and the increased intra-uterine pressure, and is not flaccid as it is when the uterus is relaxed or just beginning to contract and, furthermore, the retraction ring does not descend toward the pubis appreciably between pains, because the lower segment has very little retractile power.

Thinning Out of Lower Segment

When one observes the extreme thinning out of the lower segment as this circular musculature is pulled upward, as we might say into the fundus, he can easily understand why ruptures of the uterus nearly always occur in the lower segment.

To determine the tensile strength of the walls of the lower segment as against the power of the fundus in overcoming the resistance of the passenger in the birth canal requires a sense of estimation too delicate to be trusted in weighing a dose of pituitrin, hence the danger in its administration even when dilatation is complete.

Labor always produces permanent changes in both the lower uterine segment and cervix, the extent or degree of which is determined by the amount of strain thrown upon them, and the methods of artificial interference.

Note the transformation, during labor, in the cervix of a primipara from a small tube, in most cases scarcely more than one-fourth inch in diameter, to a canal whose diameter is three and one-half inches. As the circumference of circles have the same ratio as their radii, the area of the mucous membrane of the dilated cervix is approximately eleven times the apparent area of that of the undilated cervix. However, there are two factors which come into play to relieve the tension and prevent to a great degree the splitting of the mucous membrane in this enormous dilatation: One is the palmate arrangement of the folds of mucous membrane and the other is the deep racemose glands. In a normal case as the bag of water and presenting vertex slowly descends into the cervix, these lateral branches of the anterior and posterior systems of mucous membrane folds, fixed to their respective stems, the longitudinal folds, swing outward and downward increasing the capacity of the cervical canal by the same mechanical principle as the elevation of the ribs increases the capacity of the chest. At the same time these folds are flattened out by the intra-cervical pressure and the giving way of the elastic connective tissue support. As this takes place the mouths and lumen of the cervical glands are stretched and torn open and their viscid, tenacious secretion is forced out to relieve the friction contact between the thinned out re-

ceding cervix wall and the advancing head. However, even when this dilatation of the body of the cervix takes place in as ideal a fashion as I have described, breaks in the continuity of the mucous membrane and distortions of the connective tissue and musculature occur, which the process of involution never entirely overcomes and each succeeding labor adds to these permanent changes so that in multiparae of many labors the palmate folds of the mucous membrane are obliterated and the elastic connective and muscle-tissue is replaced by inelastic scar tissue.

As marvelous as is the dilatation of the body of the cervix it is no more so than the opening of the external os in an ideal manner. It has been noted that in primiparae most of the vaginal portion of the cervix is lined by stratified squamous epithelium of the same type as the vaginal covering of the cervix, and between them is the compact elastic connective tissue of the vaginal portion of the cervix. As this connective tissue is continuous with the same tissue of the lower segment and upper cervix, it takes part in the dilating and pulling-upward-process of the middle layer, and in the process of effacement and dilatation of the cervix almost entirely disappears from its vaginal portion; leaving the inner and outer layers in contact with each other, so that the examining finger feels that thinned-out condition of the cervix, which is so pleasing because of its promise that delivery will soon take place.

This thin double layer of mucous membrane is projected into the vagina over the bulging bag of water or head. It has not the elasticity to permit it to dilate to a circumference equal to that of the child's head; so it begins to tear at the margin of the aperture, which marks the external os, and to roll back and for each inch of this radiating tear, two inches are added to the circumference just as a small longitudinal dorsal slit of a prepuce when pushed back becomes a transverse or circular slit, of double length. These tears of the thinned-out cervix extend outward until they meet the reinforcement of the more elastic and thicker cervix wall and assume a circular direction where they may be seen by pulling down the cervix immediately after the birth of the child. Due to the greater stress being upon the inner layer of this prepuce like external os, and the outer layer being more elastic and resistant, the internal one is torn farther than the external, and after labor is over and the cervix recedes and becomes inverted and healed the stellate scars or notches, which can be felt or seen, indicate the extent of the tear in the external layer.

This is another ideal phenomenon of the

process of dilatation, but unfortunately it does not occur as frequently as it should.

A study of the physiology of the lower uterine segment and cervix in the first stage of labor explains the failure of and damage done by the many devices for artificial dilatation. The forces must be directed from above, downward, and not from below, upward. We must also learn to discard the idea that the lower segment and cervix play a passive part in the process of dilatation; for all the force engaged in this drawing up of the musculature and connective tissue of the middle layer does not come from the fundus. Much of it is independent and is the only true peristaltic action observed by the musculature of the human uterus. If this statement appears theoretical, the fact that most of these fibres return to their original position after labor clears it and establishes the fact. During both the first and second stages of labor the ligaments of the uterus also play an active part in directing the forces of labor and attach the lower segment and cervix to the pelvis.

Distortions or pathological conditions of these ligaments can cause malpositions and various other complications of labor.

In conclusion, I wish to state that valuable, practical clinical applications may be made of the observable phenomena of the lower uterine segment and cervix.

Watching the action of the lower uterine segment during labor by external suprapubic examinations is a safer, more scientific and dependable procedure for determining the progress of labor than is either vaginal or rectal examinations. It is safer because the possibility of infection is eliminated and the sensitive reflexes of the cervix are not stimulated. It is more scientific because by it the examiner is directing his attention to the forces and mechanism of labor rather than to their results, and is able, therefore, to anticipate troubles and, therefore, many times to avoid them. With the internal method of examination it is a case of "Advance and be recognized!"

External examinations are more dependable because the field is broader; both the sense of touch and sight can be applied, and with more accuracy. I do not mean that internal examinations are never advisable but in the majority of cases they may be, and should be, dispensed with. By attention to the functioning of the lower segment and cervix in their relation to the other forces of labor and their manifestations, the obstetrician is able to control and direct labor, and thus reduce its pathology.

I have in this paper avoided discussing the many pathological performances and condi-

tions of lower segment and cervix that we meet, because there is almost no end to them, and then, I am of the opinion that obstetrics will attain a higher place as a specialty by those who practice it directing more of their thought to the normal processes of labor, rather than to the devising of new operations and methods of interference or to the elimination of any of its natural processes.

1. Williams—Obstetrics—1904 P. 149

2. Surg. Gyn., and Obs., July 1911.

Discussion.

Dr. R. K. Pemberton, McAlester: I just want to ask for information. We are taught you know, not to use pituitrin until the uterus is dilated. The doctor advises us not to use it when it is dilated completely. I want to know if we are going to put the pituitrin out of business. The greatest temptation I have to use the pituitrin is in the primipara. I never do it unless it is an instrumental case, a case where the forceps are applied. I just ask that as a matter of information as to the use of pituitrin in obstetrics.

Dr. Albert C. Hirshfield, Oklahoma City: Dr. Hatchett's paper, I might say, was a classic example of the ascendancy of the art of obstetrics, while Dr. Osborn's paper is an extremely fine resume on certain scientific phases of obstetrics, namely, the anatomy and physiology of the lower uterine segment. I don't know of a text book, or all of them put together for that matter, that give anything like the complete treatment of this subject that Dr. Osborn's paper presents to us. It was too specific, too deep, I might say, for me to grasp the details just from hearing it read. I hope to get hold of a copy or a reprint of it and study it over and recommend it to our students. There are so many phases that one hardly knows where to attack it, or, I don't want to say "attack it," but where to commend it.

The thing that struck me of particular interest was his reference to the application in one form of section, that is, the vaginal section. That is Ray's method, and I think in certain cases it is best and safest, because it has less shock to it, and much less danger of infection and hemorrhage, and you can afford to take more time to it. It is especially applicable, of course, in cases of infection, where you don't want to go through the peritoneum, or in cases of toxemic pregnancy, where the patient is a poor operative risk and resists infection but very poorly.

It was interesting to hear Dr. Osborn's comment on pituitrin. I have never used pituitrin very much. I am quite as radically opposed to it as Dr. Fowler is, as I have always felt it was dangerous, but I have been

under the impression that in certain select cases, provided the cervix is completely dilated, and I never use it otherwise, it was fairly safe, providing you use very small doses, and if it is not effective, discard it. But his comments in that regard are very interesting to me, and I hope to be enlightened by further reading on that subject. If he is right, I suppose we will have to discard the use of pituitrin altogether.

Dr. W. M. Fowler, Oklahoma City: I want to express my appreciation of this paper that has just been read, and I want to also express my disagreement in no uncertain terms on a part of the paper.

In the first place I don't believe that the height of Bandl's ring is a reliable means of diagnosis concerning the dilatation of the cervix. In some cases, obstructed labor, or other cases in which the diagnosis is important, take contracted pelvis, for instance; the head will hold the cervix, particularly if the patient bears down in the first stages of labor, the head pressing against the tubes will hold the cervix down into the pelvis, and the strong uterine contraction will pull upon those rings much harder than would be the case in normal labor.

I think there is one reliable means of diagnosing complete dilatation of the cervix which is not infallible, and which is the best, I think; that is, a finger examination, either rectal or vaginal. If the cervix can be felt with the examining finger the cervix is not fully dilated. Now that is easy, isn't it? I use the term four fingers and five fingers dilatation to designate the degree of dilatation but no definite number of fingers will apply in determining complete dilatation as it varies in different cases. When the cervix is fully dilated it means that the cervix is dilated enough to pass over the largest part the fetal head and we should be sure that it is sufficiently dilated and that the strong contractions, uterine contractions are going to draw it over the head.

I think that is the danger of the paper. I think the paper is an excellent one, and the Doctor ought to be complimented for it.

Dr. Carl Puckett, Pryor: I don't use a great deal of pituitrin. It has been my practice to never use it until I feel like I have the head engaged. I have used it. I used two shots last year when I didn't have the head engaged, but I thought I had complete dilatation, and it was not necessary to use forceps at all. I just bring this up to learn something. I want to get somebody else's expressions. That has been my experience, to use it after the head was engaged in the pelvis, and it seems to me in country practice I find

that I get very good results in those cases. In other words it saves the necessity in many cases of using forceps. I am afraid of the stuff, I will admit that, and I try to be very cautious about it, and I don't use it in one out of ten cases, I guess, but I have done it when I feel like I have to use it to finish up the case and avoid using forceps. Now, when the Doctor comes back for the closing discussion I want him to enlighten me a little along that line.

Dr. Fair, Piedmont: I would like to ask the Doctor how he can be afraid to use pituitrin before he has an engagement? (Laughter)

Dr. W. W. Wells, Oklahoma City: This is one thing that I certainly am interested in. In this paper the Doctor has explained to us the theory of dilatation of the cervix and the muscles that take part in it, the mechanism of it, you might say. It is always of great interest to me to know exactly how much dilatation I have had. I make rectal examinations, sometimes vaginal examinations to be sure that the cervix has thinned out. The Doctor says sometimes the cervix will split off on the end and there will be a transverse tear internally in the cervix, letting a part of the cervix come down and elongate. Now if there is some method, and he seems to give us one, of being able to determine the amount of dilatation by the Bandl's ring. In the last two weeks I have had two cases of retained placenta where I had to deliver it manually, and I found a ring up there of some sort that was not dilated more than two fingers. If that is what the Doctor is speaking of, we are all vitally interested in it. If this ring goes up, as he says it does, and we have four fingers dilatation, as the Doctor says, it is certainly an advance in obstetrics that we have not, at least some of us have not, been able to determine up to the present time, and we hope to benefit by it. I am certainly going to try it out, and this probably will not be the last meeting of this society, and some years later we may be able to present this discussion more intelligently.

Dr. Osborn, Closing: I didn't expect this paper to be the final word on this subject, because there has certainly been a wealth of material written on the lower uterine segment and the cervix. I think we owe to Braun, probably as much as anybody, the clinical conception of Bandl's ring, and those fellows back there one hundred or two hundred years ago had a great time fighting over it, and they never settled it, and it is up to us nowadays. I think, to get busy and settle the question with regard to Bandl's ring.

I don't say that I never give pituitrin, nor that I would pick out any particular case in

which I would want to recommend it. I think you have to have a sort of an intuition there, and the longer I trust to my intuition the less pituitrin I give, because I am losing faith in that even. But after you study the lower uterine segment, listen to it with the stethoscope to the uterine souffle, that terrific rush of blood through those sinuses, you will hesitate to give pituitrin, when you realize how thin it is. Then I have noticed in doing Caesarean section, when we get into the lower segment that is not more than, well, it seems less than a quarter of an inch thick, or one eighth inch thick in some cases. I remember doing a Caesarean section on a woman with the eighth child, and the lower segment of the cervix was so thin, it wasn't one eighth inch thick, and I remember the uterus contracted just as I cut into it, and it tore down into the lower segment and I had quite a little hemorrhage for a moment until I caught it, and that just put the fear of the lower uterine segment into me. I wouldn't condemn pituitrin in every instance, but if you will note the case reports of rupture of the uterus, in nearly every instance pituitrin has been given and recently some man, I can't think of his name now, reported a case of rupture of the uterus, and said that they thought they were perfectly safe in giving pituitrin because the woman when she came into the hospital had complete dilatation and the head was down in the pelvis, yet they got a rupture of the uterus and the woman died. But it was just an old multipara that had too thin a lower segment.

Dr. Hirshfield remarked that Dr. Hatchett's paper was more upon the art and mine more upon the science. I don't believe we can hardly mark the dividing line. I was very much interested in Dr. Hatchett's paper, and in connection with the physiology of the lower uterine segment and cervix, you have got to have art there in order to make application of the scientific side of it. You have all seen patients quiet down when the doctor came into the room and talked to them a little bit. In fact those terrific pains are not necessary; it is not necessary for a woman to have terrible forcible pains, as the contractions that cause the dilatation can come on gradually, and should come on gradually in order to secure that ideal dilatation, and I believe if we are ever going to accomplish anything in the way of the selection of a proper anesthetic to be given in obstetrical cases, it is going to be based upon that knowledge of the dilatation of the cervix, and we will have to regulate and select our anesthetic so as to secure the least pain in the dilatation but not overcome the uterine contraction.

After dilatation is complete, the chief force

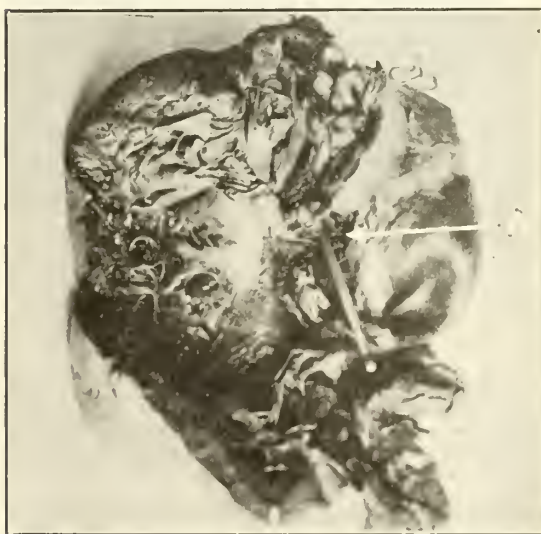
in expelling the child is the voluntary efforts of the mother; of the patient herself; the bearing down that she does. So, there is a very close connection between art and science in handling obstetrical cases.

Regarding Dr. Hatchett's question about finding the contraction ring. I heard of the contraction ring, heard it mentioned quite a good deal and began to study it about ten years ago. For a long time I made my external examination until I was assured I felt the contraction ring, then I would make another vaginal examination. When I was sure that the contraction ring was raised, I would make another vaginal examination, and have traced it up that way. Of course it is not an absolute rule, but as a rule it will correspond with the amount of dilatation which you have, and when you have at least four finger raise of Bandal's ring, you are pretty sure your cervix is completely dilated. It won't fail very many times. I think I have covered all I want to say about pituitrin.

Regarding the giving pituitrin before engagement. If you haven't very much dilatation you are not going to do very much harm giving pituitrin. Pituitrin won't have any great effect until you get some dilatation. Get that lower uterine segment started to raising or the circular fibers there started to raise, and then pituitrin will cause some work.

AN INTERESTING HEART-LESION

At a recent Post-Mortem examination the following interesting heart-lesion was found. Unfortunately I have no previous history or



A Oval window, match introduced in same

(Figure one shows a view of the left ventricle of the heart with a match introduced into the foramen; it shows very nicely the aortic cusp and the orifice of the right coronary artery.)

clinical findings of the patient. The heart is a typical dilated and hypertrophied heart. On examining the aorta, at its very beginning, one finds this most interesting and unusual condition; to the left of the right coronary artery there is an oval foramen measuring 1 x 2 cm; at its lower edge one sees the cusp of one of the aortic valves. The edges of this foramen are smooth. On introducing a probe, one finds this oval window is merely the opening of a bulbous cavity, measuring 4 x 4 cm.

As we view the heart from the right ventricle, one sees the bulbous cavity more clearly and one is immediately struck with the fact that the bulbous cavity occupies the site of the Pars-membrana-septi (the usual site of congenital deficiency of septum). This bulbous cavity is without muscle fibres—merely lined with endocardium.

To recapitulate—we have a bulbous cavity in the region of the pars-membrana-septi and this cavity communicates with the aorta by means of an oval window.



A—Bulbous Cavity. B—Match. C—Cusp of Pulmonary Valve
(Figure two shows this bulbous cavity very nicely; a match is seen projecting through; one can see also one of the semi-lunar valves resting on the bulbous cavity)

In reviewing the medical literature at my service I was unable to find a case similar to this. For want of a better term I consider an Aortic Diverticulum as a good term to give the lesion.

In conclusion I wish to add the heart was removed from a negro who was apparently past middle age, the cause of death being Cirrhosis of the Liver and Spleen and Pericarditis with Effusion.

Fred J. Wilkiemeyer

CLINIC REPORTS

PROCEEDINGS OF OKLAHOMA CITY CLINIC, ROUND TABLE, WESLEY HOSPITAL

Dr. A. L. Blesh: *A Case of Colonic Stasis.*

Mr. X. Age 60, farmer, presented himself to the Clinic a week ago, with the following history: Up to some several years ago his health had been excellent. Ill health began at this time as an obstinate constipation associated with paroxysmal (peristalsis) abdominal pain and gas accumulations. There were accompanying digestive disturbances. Ingestion of food would often excite the abdominal syndrome above mentioned. A thorough evacuation of bowels with active purgation and enema would give temporary relief. After a few years mucus in the stools became quite common. A gradual loss in weight and strength occurred.

Two years ago he submitted to an operation for an epigastric midline hernia, without relief. A year later he submitted to an appendectomy by the same surgeon, also without relief. He was informed by the surgeon that there were many "adhesions" in the vicinity of the appendix.

At the time of his presentation at the Clinic he was practically bed-ridden and had been unable to do any work for several years. Gastro-intestinal X-ray showed a normal functioning tract down to the colon. Cecal retention 96 hours. Barium clyster showed a much dilated colon. Ileo-cecal valve competent. Test meal was negative. Wassermann negative. Referred by Dr. Paulus to the surgical side.

Operation revealed the following condition: Terminal ileum anchored by firm adhesions deep in the right pelvis, constituting a so-called "Lane's Kink." The cecum and ascending colon were plastered with adhesions firmly against the lateral abdominal wall. The transverse and descending colon greatly dilated and unusually thick walled. No evidence of an ulcerative process, tuberculous or otherwise. Gall tract and stomach negative.

Findings warranted the assumption that the colonic stasis was due to adhesions of the ascending colon, which so crippled peristalsis in this portion of the bowel as to convert it into practically an inert tube. I have observed this phenomenon before in different portions of the gastro-intestinal tube, observing a peristaltic wave traverse the bowel until it reached a fixing adhesion where it would die down.

One of four different surgical procedures

for relief presented themselves to the mind of the surgeon.

1. The now classical and almost abandoned ileo-sigmoidostomy of Lane with blind cecal end.

2. The Coffey procedure of establishing an artificial ileal anus so prepared as to permit subsequent Mikulicz extra peritoneal restoration of intestinal continuity.

3. Resection of ascending colon, with ileal anastomosis into transverse colon.

4. Ileo-sigmoidostomy with establishment of fistula leading to cecum by bringing the severed stump of ileum through a right rectus stab wound.

The first was ruled out because in about 60% of these cases of ileo-sigmoidostomy in the writer's hands, done by the Lane method, there was a reversal of colonic peristalsis which kept the colon full of putrescent fecal matter with consequent continued toxemia plus colon colic. In about 40% results were almost ideal because for some unknown reason no reverse peristalsis occurred.

This experience of the writer's has been corroborated in the hands of other surgeons. To get away from it, Lane went so far as to do colectomies. A cure by colectomy is worse than the disease.

The Coffey procedure was rejected because of the distal colonic adhesions which would again become active in causing recurrence upon restoring ileal continuity.

Resection of the ascending colon with the conditions found in this case is a good operation and I have done it many times. However, the operative mortality is relatively high because of the very septic nature of the bowel contents and the rather severe surgical ordeal. It is true that in expert hands most of these dangers have been overcome but it will nevertheless always be a more radical procedure than the operation selected here, which was the fourth method described above.

By this method we can bring the bad 60% of the Lane operation under complete control.

The intestinal tract emptying direct into the sigmoid will rest the colon. If there is regurgitation toward the cecum it can be washed out by thru and thru irrigation thru the anchored ileal stub, the end of which was inverted and closed at time of operation to be opened by cautery after all incisions have healed.

If this case falls into the 40% class of good results we can seal the fistula by actual cauterization of the mucosa of the ileal stub.

There will be little inconvenience from leakage since the competent ileo-cecal valve protects from back-fire from the colon.

Dr. J. Z. Mraz: *Undiagnosed Ureteral Stone with Secondary Infection and Destruction of Kidney.*

Case No. 7947. Woman, aged 28. Family and personal history negative.

Present illness: For past seven or eight years has had attacks of pain which she locates in the left sacral region. Pain radiation was not constant, it sometimes being upward to left scapular region and at other times forward. Soreness invariably followed. As time went on the attacks became more frequent and of late have been associated with frequency, fever and chills.

She has been operated twice, first operation seven years ago, and the second one year ago. As a result she has lost both tubes, ovaries and appendix. The most prominent symptoms were not relieved by these operations.

Last attack began six weeks ago, and recovery has been slower than usual, she still having fever to 100 degrees. Tonsils have been removed.

Physical examination negative except as follows: General appearance septic. Palpation elicits tenderness in region of left ureter and kidney, and over left sacro-iliac synchondrosis.

Catheterized specimen shows gross amount of pus cells. Cystoscopy: bladder capacity 300 c. c. Bladder negative except for a trigonitis. Ureters catheterized. On left side the catheter blocks about three inches above bladder and upon reaching this point gives rise to severe pains exactly similar in character and location to the pain which always initiated her attacks.

P. S. P. test—Right kidney—color appeared in two and one-half minutes with 17 percent in 15 minutes period. No urine from left kidney. Pyelogram of left kidney and ureter made after injection of 14 c. c. thorium nitrate. Pyelogram shows a small stone just beyond tip of catheter in left ureter. Above this is seen a tortuous dilated ureter and a dilated kidney pelvis with complete obliteration of calyces. Right kidney urine negative on urinalysis and culture.

Diagnosis: 1. Left ureteral stone.
2. Left pyonephrosis.

Operation: Left uretero-nephrectomy performed by Dr. M. E. Stout. Stone removed with ureter. Stone of Mulberry type found firmly embedded in fibrous tissue.

The interesting features of this case are: location of pain was not over the kidney, but over left sacro-iliac joint and this corresponded with the level at which the ureteral stone was found.

Appearance of bladder as seen through

cystoscope gave no clue to the kidney infection above, although the left kidney has been practically destroyed by infection and a stone was found but a short way above the bladder, yet the region of the left ureteral orifice was entirely negative.

The value of pyelography was nicely demonstrated in this case, for while it was impossible to obtain any urine from the left kidney, the pyelogram showed conclusively a left pyonephrosis. The most striking lesson to be learned from this case is that an earlier cystoscopic workout might have saved the patient two useless operations and a healthy kidney.

308 Patterson Building.

Dr. J. C. Macdonald: *Streptococcus Septicemia.*

Male, age 38 years, married. Patient brought to hospital because of his serious illness which began 15 days ago with sharp pain in left side of face. No fever noticed. In five days this was followed by a purulent discharge from left ear which gave patient a little ease. Three or four days later the left cervical region began swelling. Had a severe chill while on way to hospital.

Physical examination shows fairly well developed man who appears extremely ill. He is listless and apathetic. Heart and lungs negative. There is a profuse discharge from left ear. Canal shows no bulging along post-superior wall. No tenderness on pressure over mastoid. Below angle of left jaw there is a marked swelling. This is very tender but does not exhibit any fluctuation.

The following day the swelling under the angle of the jaw had disappeared. The ear discharged profusely but there was no pain. The urine showed fair amount of albumin; granular, hyaline and blood casts, many r.b.c. W.B.C. 14,200 showed polys 94%, small lymphs 2%, large lymphs 1% and eosinophils 1%. Culture from blood showed a growth of streptococcus viridans. X-ray of mastoids showed right mastoid cells clearly defined, while the left mastoid cells were dull and hazy.

A simple mastoidectomy was done with exposure of lateral sinus. No thrombus was found in lateral sinus. The following day the patient appeared much brighter and he was given 100 c. c. antistreptococcus serum along with 200 c. c. of glucose solution (10%) intravenously. The patient showed considerable improvement for several days. There were several abscess formations on different parts of body and joints were red and painful. Five days after mastoid operation patient had a chill, respiration and pulse became much more rapid and patient died three days later from general streptococcus septicemia.

Dr. W. W. Rucks: *Peculiar Phenomenon Occurring During the Administration of Goetsch Test.*

Patient referred to me for examination for supposed hyperthyroidism.

Make up of patient. Young woman of healthy appearance and normal development with good heredity and no previous illness except ordinary diseases of childhood, from all of which, according to her history, she made good recoveries with no complicating sequelae.

Her habits are fairly regular. She is not constipated and her menstrual life began at 16. She has always been regular.

Her chief complaint is a feeling of choking, which she has toward the end of the day and at night. She works in a store. The work does not especially tire her and she keeps up the same social activities that other young women of her town keep up and does not suffer from exhaustion. In fact, her endurance seems not to have diminished in any way.

Physical examination of head is negative, including teeth and throat. Neck shows some visual and palpable enlargement of the thyroid, pressure on which aggravates the choking sensation of which she complains. Chest was found negative. Also abdomen and extremities, except the deep tendon reflexes which were hyper-active.

She was advised to rest in the hospital over night, and the next morning I carried out the Goetsch technique for detecting hyperthyroidism.

Her pre-test blood pressure was 110-70 and pulse rate 92. Subjective symptoms were quiescent after the night's rest. Eight min. of 1-1000 adrenalin chloride was given by hypodermic, and within five minutes her blood pressure changed in that the systolic went up and diastolic went down, which usually happens when there is response to adrenalin, but the peculiar thing in this case was that the diastolic pressure continued to drop until the sounds could be distinctly heard when the hand on the dial stood at zero. Knowing that this diastolic peculiarity was often found in aortic insufficiency, heart examination was made with the result that a distinct blowing sound was heard in the second interspace to right of the sternum, and faint capillary pulsation could be detected. This phenomenon lasted for an hour, when the diastolic pressure began to rise and within an hour and a half was up to 60 and no abnormal sound could be heard in the aortic area.

The other phenomena present were an increase in pulse rate from 92 up to 150, with the pulse remaining in the neighborhood of 140

for more than an hour and a half. Marked tremor was manifest, where there had been none before. Heart action was tumultuous—and respiration sighing, all of which are the usual phenomena brought out in a positive Goetsch test. But the peculiar thing in this case was the behaviour of the diastolic pressure and the development of an aortic regurgitation. I know of no one who has before made this observation.

Dr. D. D. Paulus: *Case of Chronic Cholecystitis Treated by Duodenal Lavage.*

Case No. 7910. Housewife, age 54. Had usual diseases of childhood with good recoveries. Had typhoid at age of 30, sick for 2 1-2 months. Next illness was 19 years ago with rather protracted course of fever from which she made a rather slow recovery. During her convalescence from this illness she developed a right side hemiplegia which however was only transitory and from which she made a complete recovery in several weeks.

Present Complaint: Comes to physician because of digestive disturbance consisting mainly of fulness in epigastrium with gaseous eructations and considerable gas accumulation at times. Never has been jaundiced. Suffers more or less from attacks of migraine. Appetite is fair. Bowels have a tendency to constipation. Sleeps fairly well.

Physical Examination. Eyes negative. Teeth many filled and crowned. Tonsils submerged. Glandular system shows left posterior cervical palpable. Chest negative. Abdomen negative except for considerable tenderness of gall bladder region, which patient states is more pronounced at times. Reflexes O. K. Temperature 98.6. Pulse 78. Blood pressure 120-85.

Patient was advised to have teeth X-rayed. Agar agar given for bowels with suitable diet and duodenal lavage advised for gall bladder condition. The X-ray examination of teeth showed no apical abscesses. So far she has had three duodenal lavages with good success each time.

The method followed in doing the duodenal lavage is essentially that as outlined by Dr. Lyon of Philadelphia. The patient comes to the hospital in the morning without breakfast. She is then allowed to swallow the duodenal tube and the stomach is lavaged with warm water. When this has been completed about 250 c.c. of the water is injected into the stomach through the tube and the patient swallows the tube to the proper mark. Now the patient is placed on the right side and the hips elevated by pillows.

After from 15 minutes to two hours, the tube will have passed through the pylorus into the duodenum. This can be ascertained

in various ways. Sometimes the fluid pouring from the tube shows bile, or the contents can be tested by Congo paper. After one is sure that the duodenal bucket is in the duodenum, 15 to 20 c. c. of a 33% mag. sulphate solution is injected to procure relaxation of the sphincter of the ampulla of Vater and contraction of the gall bladder wall. The bile is now allowed to drain until the gall bladder has been emptied and the bile comes from the liver as shown by the rich golden yellow color.

During the past ten months we have used this method of treatment for the mild chronic cholecystitis cases only, except in one case of stone in common duct. This case was a male patient who had his gall bladder removed seventeen months ago. Seven months ago he developed severe pain in right upper abdomen with severe chill, temperature to 104 and jaundice. Chills and fever had been repeated four times when patient entered the hospital on account of jaundice, it was thought patient was a poor operative risk. Patient was given four duodenal lavage, with entire subsidence of all symptoms. Diagnosis in this case was stone in common duct. Seven months later he reports no recurrence of symptoms.

The value of duodenal lavage in the diagnosis of gall bladder conditions is questionable, but undoubtedly it will attain its proper position as a therapeutic agent in the milder forms of chronic cholecystitis.

Dr. W. W. Rucks: *Case of Tetanus Recovering Under Treatment.*

Some months ago I reported a case of tetanus recovering under treatment and now I have the opportunity of reporting another.

This is the case of a boy three years old sent to me by Dr. Williams of Norman, Oklahoma, on December 12, 1921. The history is that twelve days ago the child received a punctured wound in the palm of the left hand. This wound was made by a rusty nail. The wound healed quickly, with no secondary infection. No doctor was called.

Four days ago, eight days after the injury, the mother noticed a peculiar drawing of the left hand and forearm. Child became fretful, cried a great deal and had a little fever. The next day the mother noticed a drawing of the mouth, and the left arm would cramp on being touched and the child would utter a peculiar cry. The child was then taken to Dr. Williams who at once diagnosed tetanus and gave an intramuscular injection of 1500 units of antitetanic serum.

The next day the convulsions became general and the child was sent to the hospital, when the above history was obtained and physical examination confirmed the observation made by the mother and diagnosis of the doctor.

A spinal puncture was done at once and a clear fluid under considerable pressure obtained and 6500 units of antitetanic serum given into the spinal cord and 3000 units intravenously—bromides and chloral hydrates given per rectum. This was 8 P. M. During the night the child had a number of general convulsive seizures. The left arm remained in tonic spasm and risus sardonius was marked. In the morning of the next day, December 15, 1921, 10,000 units of serum were given intramuscularly and in the afternoon another 10,000 units given in the same way. December 16, 5000 units were given intraspinally, 5000 in the muscles and the scar excised and serum injected into and around its location. Patient was sleeping a great deal from the rectal use of bromides and chloral.

On the 17, much improvement was noticed and from this time on, improvement was rapid and he was discharged on December 23, a cured case.

This and the case previously reported establish a new record in my experience, as previous to this not only all my cases died, but all that I had seen in the practice of other physicians. I attribute the recovery to the intraspinal use of antitetanic serum and also to saturating the system with it through the circulation.

Dr. Marvin E. Stout: *Case of Gas Gangrene.*

Mr. C.—Case No. 7726. Age 28. Farmer. Was referred to the clinic October 19, 1921, at 2 A. M. and was seen by Dr. Paulus who obtained the following history.

At 11 A. M. of October 15, (about three days ago), he was riding along the section line in a wagon, from which he jumped and lit on a small sprig about 1-4 inch in diameter. This passed through his shoe and into the ball of the foot for about one inch. He consulted his physician immediately who cleansed the wound with iodine and applied an antiseptic dressing. The wound soon became very painful and in about four hours, it began to swell. Ice was applied day and night and two hypodermics were given without relief. Cold was changed to heat, but pain continued to grow worse until he was seen by us, at which time his temperature was 104°. He was suffering intensely and appeared septic. The foot was swollen and red and the swelling and redness extended up the leg almost to the knee. There was a small dark spot about the size of a half dollar on the side of the foot. A slight crackling sound could be elicited by pressure over the foot and lower leg. A foul smelling bloody water was dripping from the wound but the crackling, the dark spot and the discharge had only been present for a short time when he consulted us, the patient stating positively

that neither of them had existed as much as twenty hours.

Gas Bacillus Gangrene was diagnosed and the leg was amputated well above the knee, the line of incision being four or five inches above the slightest signs of involvement. The stump was left wide open and a heavy gauze pack soaked in peroxide of hydrogen was applied. Beneath the gauze a drainage tube was carried from each angle through which peroxide of hydrogen was injected every hour.

The patient's temperature reached normal within six hours. His general condition rapidly improved. The wound was sutured on the third day, dressed with dry dressing and it healed primarily.

We all have learned from the few cases of Gas Gangrene we have seen, that prompt and radical surgery is the only means of combat. The difficulty is that it travels so fast and most of us see so few cases in private practice that we are likely to fail to recognize it until it is well advanced, unless we are ever on the alert.

Annual Meeting—Oklahoma City Hotel Rates

"Do It Now"

Following are Hotel rates for state meeting.

Huckins Hotel: Single Room with bath (1 person) 2.50; Single Room with bath, (2 persons) 4.00; Single Room without bath (1 person) 2.00; Single room without bath (2 persons) 3.50.

This hotel is Headquarters.

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Kingkade Hotel: Single Room with bath (1 person) 2.50; Single Room with bath (2 persons) 4.00; Single Room without bath (1 person) 1.25; Single Room without bath, (2 persons) 2.50.

Bristol Hotel: Single Room with bath (1 person) 2.50; Single Room (2 beds) with bath (2 persons) 4.00; Single Room without bath (1 person) 1.50; Single Room (2 beds) without bath (2 persons) 2.25.

Egbert Hotel: Single Room, with bath (1 person) 2.00; Single Room with bath, (2 persons) 3.00; Single Room, without bath (1 person) 1.50; Single Room without bath, (2 persons) 2.50.

All reservations should be direct with the clerk of the hotel; in the event that proper reservations can not be made The Chairman of the Hotel Committee will be glad to assist in any way possible in securing the same.

Address such requests to Fred H. Clark, 313 Shops Bldg., Oklahoma City, Okla.

Very sincerely,
Fred H. Clark.

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Local news of possible interest to the medical profession, notes on removals, changes in address, deaths and weddings will be gratefully received.

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EDITORIAL

SPECIAL ATTRACTIONS OF THE ANNUAL MEETING, OKLA- HOMA CITY, MAY 10-11.

The Oklahoma State Medical Association meets in Oklahoma City May 9-10-11. Among some of the attractive features will be the presence of Dr. Daniel Eisendrath of Chicago, and other men of National reputation. Arrangements have been perfected whereby the various hospitals of the city will furnish clinics for three days which will be open to the visiting physicians and the public as well. The committee in charge has arranged for some very pleasant social features to take place during this time. A large attendance is anticipated and a splendid program has been provided. This is looked forward to as being one of the best meetings that the Oklahoma State Medical Association has ever held. The sessions will be conducted at the State Capitol giving the visitors an opportunity

to visit the capitol building while here. A large number of automobiles have been provided for to be placed at the service of the visiting physicians and their wives in order that they may reach all points of interest while here. The clinics will be conducted by men who are specialists in various lines of work. The program has been arranged not to conflict. Those who desire may attend both clinic and regular program. The committee in charge will leave nothing undone to make this the most successful meeting of its kind ever held in the state of Oklahoma.

H. M. WILLIAMS, Chairman Publicity Com.

"REGULATING" THE CULTS.

The JOURNAL, for many years, has been recipient of letters and communications, some asking for advice, some advising their idea of a course of procedure, some using a hypercritical, fault-finding tone, some full of obvious Ego, plus the apparent fact that the writer was nothing if not merely a con-constructive, griping critic, ever fault-finding, never getting out of the wagon and putting his own knees to the muddy hub of the non progressive machine he would have the other fellow yank out of the mire. On occasions we attempt some sort of answer to these, but the task of reply leads one so far afield, demands such a wide range of statement of fact, if the writer is to receive what he seeks, that proper answer has been found almost impossible, also useless, so far as accomplishing good.

Not long since we passed all bounds; four pages or more must have been used—we think wasted—but a part of the communication so well stated our attitude, our ideas of what attitude our profession should assume and the policy we should adopt, that we feel justified in passing it along.

All of these matters pertain to the "Regulation" of the other fellow. The Chiro, the "Scientist," the Osteopath, all come in for a share of the lambasting and criticism. It is wished to know what the best plan for suppressing them and "Regulating" them is thought to be by this office. Well, we have finally reached a solution of the vexatious matter, and we shall state our conclusions in the sincere belief that if each medical locality follows the suggestions, real and implied, there is no doubt in our minds but that eventually these cults will be catalogued by a grateful public as they should be. To reach this solution we did not have to leave our own fireside, our own home town or cull experiences out aside from the pages of our own personal experience. We state this in order that the reader may appreciate that we know whercof

we speak. The writer inspiring the letter, so full of our sage advice, wished to know what his locality should do to "curb" the Osteopath, who, in his town, was assuming to do all sorts of impossible things, things common-sense and reason indicated he was utterly unfit to do, the people were suffering as a consequence, from improper, injurious treatment. The reply took a page from our records as it was then daily unravelling itself. We cited the cases then in our hands, not going further back than three months. The first was about like this.

S.H.S., White, Male, Age 52, applied for treatment 10-22-21. Wished an operation for varicose veins and ulcers, the latter, he stated, had not been entirely cured for about 20 years, or since the Spanish-American War, of which he was a veteran soldier. His story was interesting, if true, even in the main, it was a stinging indictment of our own profession, for he had staid with us "Regulars," he had paid us, according to his version, "thousands of dollars." Latter acquaintance brought us knowledge that he told the cold, cruel truth. He had been a meat cutter, believed his trouble dated from his work, when he stood in ice-cold rooms, handling heavy pieces of meat, his limbs cold and wet. Denied venereal infection of any type. Exhaustive laboratory examination, covering every ordinary matter disclosed nothing but varicose veins, plus their inciting, etiological causative veins, which could be easily detected from knee to ankle. The ulcers were large, varying from about four large ones, five to six inches across, to several smaller ones. He was then suffering severely from great swelling of the limbs, had slept none (he claimed not a particle of sleep for a week.)

We talked to him. Had he ever had certain tests? No. We advised our willingness to "operate", but suggested, first, that an alternative be attempted. Had this ever been used? We showed him, from a very old edition of DaCosta's Surgery, a picture of the well-known, old and time tried zinc oxide plaster, retentive dressing; applied as every one knows, not in accordance with surgical rules, for it is applied directly over an ulcerated surface, but solely and only to support the engorged, congested veins, whose walls have long since lost their resiliency, their power to tonically contract and pass their contents along to its proper destination. "No," that had never been used. We induced him to permit trial of that, then if failure resulted, we could and would operate. We cleaned those ulcers, as ulcers probably have rarely been cleaned. We cleaned up everything about the limbs, elevated them for a time, then applied the smoothest fitting, over-lapping plaster dress-

ing our skill permitted of execution. We left no wrinkles underneath, we used no half measures, the support supported the veins from ankle to knees, but it did not entirely encircle the limbs—we had heard of Volkmann's contracture and wanted it not—Our patient returned next day, smiling, he had slept all night, we were a great doctor, the procedure was repeated, to be exact, eight times by ourselves, a few, 3 or 4, by his home physician, to whom the case was returned. We watched with pride, the growth of a new skin, the return of a healthy appearance to a limb, which had been blue and impossible in appearance. The story ends with a contented patient, made so by the simplest means at the hands of any physician, whether he was a skilled surgeon or the merest medical type. Fifty nine days brought his dismissal.

The story now veers to another. Two days had not elapsed before a Widow, white, 42, deserted by a worthless husband, three children looking to her for support, applied for treatment. Her ulcer, only one, had been her guest for 14 years, she too related a story impossible for belief, but nowhere in her narration was there history of a blood-test, or the application of our old and true friend, so well depicted by DaCosta. Both and all other indicated measures were applied. The test showed "4 plus". Eliminating tiresome repetition and detail, we shall end the story here by saying the simplest thing in the way of indicated treatment, our plaster, settled the matter, almost as if Christ, not an Oklahoma doctor, had intervened in the case.

Our intent should by this time be patent. The story above only touches one type of cases. Of this type in the same few months several, but none so typical, appeared. There was, however, a strange coincidence observable in each and everyone. Not one had had care, if his story was to be believed, indicating that the attendant appreciated that "Beyond the Alps Lies Italy" not one ever knew that his ulcer would be an ulcer always until he treated the causative veins beneath the surface, but so palpable that sensing their existence was inexcusable. Humiliation only is the feeling of a practitioner, himself neither brilliant or much above the average. The story may be slightly varied and will apply to scores of personal experiences, aside from these cases. The record as to venereal diseases is describable by the word "harrowing" or "impossible" only. The stories of neglect, of clear and total misconception of underlying, fundamentals on the part of the attending physician, are too many and similar to be passed over as mere incidents. The story that blood-tests have been taken, almost in the same day, *but after* anti-syphilitic treatment, wholly nullifying

the test, had been administered, are unbelievable until one has the record, the blatant, raucous story conveying knowledge that nowhere did the attendant possess even the fundamentals of the problem he offered to curb and control. The incidental fact that a human life was in the end at stake, often imperilled and destroyed, seems not to have stimulated the attempt such grave responsibility as constantly presents itself to the conscientious practitioner of medicine. Sadly realizing what the story meant, we then undertook to offer our advice. Stripped of poetic license and adjectives, it reduced itself to the simplest formulae. "Go home, go to work, attend to your own business, master it until everyone knows you are the best man in all your country, then you will have curbed the 'Irregulars' and stifled the 'Cults.' Get your colleagues together, talk over your daily affairs, then be amazed at the broadening effect surely to result." It is the writer's opinion that no two or three physicians ever meet and enter discussion of any length that one or more does not leave the conference bettered, for everyone a wider vista appears, problems not before thought of present themselves, questions, before slurred over or never arising, offer themselves, notes are jotted down and the end result is dissemination of helpful information, not to be obtained by any other process. The medicine of today is so broad, so complex, that no one may hope to ever master a small division of it. That is admitted, if it is admitted, obviously we have no time to waste on others, our time is a sacred trust, wasted, the prodigal has bitterness for his reward, improved to one's best ability, the reward is honorable satisfaction. No greater is conferred upon man.

WHY OKLAHOMA HAS A LOW RATING—SOME FACTS AND WARNINGS

Oklahoma holds premier position in many things, those showered upon us by kindly smiling nature alone places us in a phenomenal position, the envied of nearly all others of the sisterhood of states, but in not all things may we "point with pride," and one such irritating situation presents itself each year to bring low our haughty heads. At this writing our office holds about the usual number of lapsed membership stubs, holds them despite repeated notices, warnings, threats and pleas to the same old member, whose prime characteristic is negligence, whose greatest possession is lack of pride. We have about 500 of him. We know he will be late for death.

We also hold a handsome, engraved invitation to attend the St. Louis meeting in May.

As usual this official notice contains carefully selected sections of the Constitution and By-Laws of the National body, and among the maze is the information that the last apportionment of Delegates entitled Oklahoma to *two*. There we stand, we have stood there for so long that memory runs not to the contrary. Several times we have stood just at the brink or "Jump-Off" when one small jump would have hurdled us over the fence into the class we deserve. The irritating thing irritates more when you know that each year our same old hook-worms eventually wake up and renew their membership, but they have done so at a time when they have performed the act to no advantage. Organized medicine would be vastly better off if no trouble was ever again exerted over them, for they are neither ornamental or dependable, on the contrary they are a costly extravagance we can ill afford. Just think of what we might do, of the high niche we might occupy if every one of us did his little "bit"—Moral, *Do Yours Now*.

We have one letter, typical of others, which no member should forget his duty and relations to his county secretary to the extent of writing such impossible stuff: "This is the first time I have ever been delinquent, *my county secretary said nothing to me, sent me no notice*, if it had not been for your letter I never would have known I was delinquent." That fellow erroneously thinks he confers a favor upon some one in maintaining his membership. The temptation to tell him to attend to his own business is great. Telling him his highly paid secretary ought to wet nurse him on every occasion does no good, we know of no system corrective of some of the impossible attitudes prevalent among the members failing to practice the slightest charitable cooperation toward his fellows. Seriously, we wonder if the trouble is warranted by the returns.

We cannot properly treat the subject without now sounding a warning to those lapsing their membership as if it were a thing not worth while, to be leisurely attended when all others serious affairs, such as attending the Shrine, keeping pace with the Rebeccas, fraternizing with some lodge, with the patent object of capitalizing the connection, which it does not. Anyone of our several hundred hindrances may face an unsurmountable stone wall of trouble on his very next move. The record of the cost due to ignored membership, as to reciprocity alone, will amaze those unfamiliar with the requirements. Not hundreds, but more, not weeks, but months, sometimes forever, has glided by over the neglectful, penurious failure to maintain good standing. **DO IT NOW.**

CONTRIBUTORS TO THE ANNUAL MEETING PROGRAM.

Patience has long since ceased to be either a virtue or justified by any rule of logic or charity, in so far as pleading, warning, supplication and railing toward a certain percentage of those whose names adorn the pages of our annual program, as contributing what is illogically denominated and called a "scientific" production of those gentlemen's creative pens. Every primer student knows that certain rules, easy of observance, are courtesies and properly due medical publications from those honored and favored by publication of their papers. Yet, despite reiterated pleas for simple cooperation in a few essentials each year leaves on our hands a number of so-called "scientific" offerings, impossible of reduction to type in any form acceptable to the most non-critical reader. No meaner treatment could be accorded some of our friends than to reproduce, literally, what they negligently hand in as their effort worth while.

To obviate this waste of effort, we again have to suggest the following rules be observed as to papers prepared for the Oklahoma City meeting:

Have your paper neatly typewritten in duplicate, so you may extend to the colleague selected to open discussion of the matter a copy far in advance of the day he will undertake that function. *Double-space* the lines, triplicates are even better. Leave very wide margins, do not entertain the idea that liberal use of paper is an extravagance. Select a title descriptive of your subject, neither too long, too short nor need it be conspicuous or bizarre, a practice sometimes leading the contributor to be held in suspicion of seeking the sensational. Under the title there should be entered a short, concise statement denoting the principal subdivisions and striking features of the paper. Have your name, followed by "M. D.," not preceded by "Doctor," follow the title.

Carefully revise your text. It might be advisable for some of us to have a scholarly, educated friend to look over the production, offer suggestions and possibly note an occasional error, grammatical or otherwise. Above all, we earnestly beseech that "cecum" be written that way throughout the paper, do not jump all over the field experimenting with other forms, just plain old every day "Cecum" is good enough for us, provided the writer consistently sticks to his first love; woe be to him if he writes it in the next line "Caecum." We will place him in a certain catalogue we maintain if he does.

That paper is the property of your Journal, your Association, your colleagues. You have

no title to it after you present to us at the meeting, so do not commit the very ordinary breach involved in taking it home to "make a few corrections." "Corrections" at this stage are not permissible, besides they indicate a slothful state of mind and open the perpetrator to the indictment of negligence. Our busiest men are the most prompt to reply to correspondence, to deliver their allotted portion or assignment. This rule is axiomatic and unchangeable as the Laws of the Medes and Persians, so if you would be catalogued in our private collection most flatteringly, make your corrections when you have the privilege, finish your task as if you were fitted for the undertaking and find yourself identified with the elect.

When your paper comes to the time of publication, the printer will mail you proof in advance of publication, and with it quotations on prices of reprints will be enclosed. If yours contains in addition to the text, cuts or illustrations, please do not insist on reproduction of old, well-known illustrations, which while very applicable to a proper rendition of the matter to an audience are entirely unnecessary in publication, as they convey no additional light on the matter not easily obtainable in many text books and works of encyclopaedic character.

THE PERENNIAL FLUX OVER THE A. M. A. "OLIGARCHY".

Cyclic and repetitive, we have with us once more the annual irruption decrying the "Medical Trust" located at 535 North Dearborn, Chicago, better and more specifically described by name as Drs. Geo. H. Simmons, Fred R. Green, M. L. Harris, N. P. Colwell, A. D. Bevan, and their allies or arch friends of medical destruction found sailing along as Drs. Hugh Cabot, Victor C. Vaughn, Alexander Lambert et al. "The Medical Advisory Committee," engineered by Dr. F. H. McMechan, Secretary Avon Lake, Ohio, who, inasmuch as his shining light and detective ability has heretofore never shone to the extent that he is as yet a household word, we shall introduce as our self-constituted Paul Revere, who, riding o'er the lea, sounds the tocsin of warning, "views with apprehension," "notes with alarm," that we stand upon the brink of national medical ruin. This prophet of the faithful is augmented by a storm cloud arising in Michigan, personally conducted by one Dr. Frothingham, who, also sees our destruction rapidly approaching, and, running true to form and class, he too urges that the "Oligarchy" be kicked out of office, so that those who really have our best interests at heart may take over the reins and demon-

strate how they would do the job of our salvation. The "Medical Advisory Committee" notes the fact that:

"The Public and Profession are being sold out to:

"Foundation Control of 'full-time' medical education."

"Lay Board domination of the 'Closed Shop' Hospital."

"Socialized State Medicine, subsidized community health centers, and hospitals under political or university control."

"Legislative dictation of therapy and fees."

"Demoralization of medical standards by the expansion of cults."

"Exploitation of the specialties by lay technicians."

Our "so-called leaders are either openly fostering these destructive forces or more subtly giving them full fling by camouflaged neutrality." This and much more is happening to us, if the statement of the "Committee" is correct. We are called upon to "Strike for our Country etc" before the fatal hour of our destruction comes. Naturally, the Michiavelian character behind this sinister work, is housed at 535 North Dearborn, Chicago, but this time, the list of our evil-geniuses has been augmented by inclusion of such arch friends as Victor Vaughn, Hugh Cabot of Michigan, Fred Green, and others supposed to be devoting their time and energies to our betterment. The latter gentlemen are given special treatment, to their discredit, by the medical circular route, emanating from the pen of one Dr. Frothingham, who, as is likely, no one ever heard of before this burst into the lime light, hails from Michigan. The small fact that Dr. McMechan has had to note that the Council of the Ohio Association has seen fit to officially publish the information that, so far as that body is concerned, he represented only himself in an individual capacity, seems not to have produced any particular sense of rebuff to that gentleman, and so, on goes the dance with all its merry abandon.

As we are asked to warn our members of their danger, we shall go the prophets one better, simply refer to the Journal, A. M. A. (January 1922), page 198, where may be found the entire illuminating correspondence. Our ruination and all.

Speaking for ourselves alone, we beg leave to submit that we are heartily tired of this eruptive habit of certain elements of our profession, always warning us of imminent destruction from those we select to manage our National Medical Activities. In our opinion there is not a scintilla of truth in or justification for the ever recurring rehash of ridiculous charges of ulterior motive, sly, underhand,

calculating practices on the part of our American Medical Association officers. Surely a rather intimate connection over not more than fifteen, nearly twenty, years, would have brought to our attention some real, tangible evidence of this existing treason in our midst? We do not ask or expect perfection in these men, if they do anything at all, little common sense is necessary to know and expect that out of the great mass of work they do, some errors, some mistakes of judgment, even mistakes of policy, will occur. They occur to all other classes of men, to our greatest political leaders. It is the part of common sense and reasonable charitable construction to admit the errors, extend our aid in reducing them to the minimum, at the same time not overlooking the fact that as the record is cast up, due credit for years of good service be accorded, upon which no reasonable critic will hesitate to issue his mental bill of good health. It should be here remembered too, that the A. M. A. is not a mysterious force, separate and apart from other human beings, the supernatural and unusual should neither be expected or demanded. We, in our haste, are inclined to the paradoxical habit of "passing the buck" to the A. M. A. executives with the demand that they undertake all sorts of activities, regardless that it is no parcel or part of their functions. The busy medical man cannot know of the countless letters of complaints fired into that office over things from the sublime to the ridiculous. One Medical Ass wastes his time, indicating a letter, carrying information to "stop my Journal," for every conceivable excuse and irrelevant reason under the sun. The A. M. A. permitted the Sheppard-Towner Bill to become law—why did you not stop that? Such and such state has this "fool law," why did you permit that? Is it possible that the writer himself has forgotten that he and only he, with similar units as himself, is the A. M. A. Is that non-existent force expected to travel around the earth, directing even the work of the town meeting or the township board? It certainly seems to be the idea lurking in some minds, or in the place where such an organization as a mind is supposed to have existence. Do we forget the adage "Every tub stands upon its own bottom?" Surely not. We should cease this senseless bombarding and leave our creatures time to perform their tasks at their best. Every issue of the Journal carries the greatest waste in the form of communications dealing with elemental matters, at the beck of anyone with intelligence and energy enough to consult age old encyclopaedic volumes, lying dust-covered all about us. We should carry our own burdens, expecting some mysterious force to finally

come into our midst and regulate everything about us, not exactly to our taste, is futile and silly to the last degree. We should cease, for instance, the wasteful habit of forwarding tons of newspaper clippings, setting out the "outrageous, unethical" actions of the other fellow, with the smug suggestion from the writer that the A. M. A. "ought to look into this." Look into it yourself. The A. M. A. could take no action, if it would do so. Every matter of ethics, of "advertising" improperly, of undue publicity, is first and always the concern of the local colleagues of the offender. The complainant himself, if he holds actionable information, more than any other individual holds the duty of indicated action, and he need not trouble any other individual with the matter. This, justly criticisable habit of slyly slipping around town urging others to act when action is the duty of the critic should cease. It is very ordinary, silly, childish, attributes only, which is best observed in these practices. It brings the critic to light as the smallest of beings, brands him as a busybody, in the act of tearing down others in the piteous belief that in so doing he will receive benefit by some peculiar system so far unknown to honest men.

Years of intimate contact with the objects of these attacks from unworthy men, impels the writer to positively assert that in no transaction has the slightest hint of impropriety, of improper motive, of selfish aggrandisement, ever come to light as a characteristic of the officers entrusted with the great work going on at Chicago. Only the spirit actuated by ignoble meanness can place such imputation against them. Theirs should be only the best we have to offer as recognition of their services, any other recompense is discreditable and unwarranted by any rule or reasoning. Any individual of us permitting uncontroverted slander and disparagement of these men, occupies a very poor niche, measured by the ordinary standards of honor. So far as their motives being base, the charge is absurd, baseless and without foundation in fact or theory. Speaking for Oklahoma and from the vantage point of years of association and official connection, the writer feels it his duty to warn his fellows against this propaganda on the part of men who are activated by personal and selfish motives, and who, if tomorrow handed the reins held by those they so glibly criticise, would, in a few months present our profession to the public in all sorts of impossible, untenable lights. The reader is most earnestly assured that only the best of motives have been in evidence to him in the association above noted. No retrospective view brings impropriety or meanness to light when the satisfactory record of nearly two decades is

reviewed. On the contrary, these self-same men have, by their interest and ability, made our office and publication so far above its former station that no one recalling the few years past can but know that the improvement has been nothing if not almost phenomenal. That the reader may further know the great worth to us of these objects of criticism, they are to be reminded.

DOCTOR HUBERT WORK, CABINET MEMBER.

The word to Oklahomans that Dr. Hubert Work, Pueblo, Colorado, had been appointed to succeed Mr. Hays as Postmaster General, comes as a most welcome piece of news. Those of us who know him, know that he will fit the place and meet the responsibilities successfully. He holds the distinction of being the first physician to ever sit in the great Cabinet of our Nation. Dr. Work is not to be catalogued as a politician by any means, in considering this honor. He, first and above all things, is a true physician, one of Colorado's most successful and respected as a man of scientific ability in his chosen specialty, that of nervous and mental disease. For years he has conducted in his home city a high-class institution in which he performed his work. Additionally to that he was one of the State's advisors in all matters medical, his only previous political appearance, it is thought, being that of candidate for his party as Senator, in which race he underwent honorable defeat. As first and succeeding speaker for many years of the House of Delegates of the A. M. A., he there evidenced his great ability as a presiding officer of great finesse and fairness, holding the respect and admiration of all of us fortunate enough to call him friend and fellow.

Another congratulatory phase of the appointment is found in the fact that probably President Harding is, up to this occasion, the most poorly advised of any president for many years past. Taft, Roosevelt, Wilson, each had the privilege of the close attention and advice of Dr. Cary T. Grayson. Mr. Harding has had to depend on a man, to be sure one he thought highly capable, nevertheless one never heard of outside of a very narrow circle before his elevation to the important post of medical advisor to a president, Dr. Sawyer, or "Brigadier General Sawyer," which title was conferred by the president upon this man, who it is charged, sincerely believed the impossible claims of Goldberger of Pellagra fame, that that disease was seriously crippling the citizenship of the great South and that it was induced by a starvation diet on their part. Notwithstanding clear evidence refuting the absurd claim, it is said, the Surgeon General allowed that stigma to remain, or that he did

not see fit to disapprove the claims or findings of Goldberger. There is also every evidence to warrant belief that the President was drawn into the matter, and influenced to the same belief, through the agencies of his very poorly equipped surgeon-general, "Brigadier Sawyer."

We shall not have to observe any such departure or lapse on account of Dr. Work. On the contrary, if the president will only ask, then follow his advice, matters medical, from the National Administration standpoint, will have an impetus never before its good fortune to entertain.

A TRIBUTE TO JULES SCHEVITZ

At a regular meeting of the Oklahoma County Medical Society March 25, 1922, after the important work of Jules Schevitz as secretary of Oklahoma Public Health Association had been referred to in laudatory terms by several members, we were charged to reduce to writing the sentiments and feelings of the Society at this hour while we mourn his untimely death.

Jules Schevitz was not a physician; he made no claim to a technical knowledge of medicine. But he was terribly interested in the development of the agencies looking to the preservation of health and the prevention and cure of disease. In his tireless work to give vitality to those agencies, he made it clear that he depended upon the facts developed through the work of legitimate medicine, and so consistently did he proceed upon that basis that it seems to be proper to regard him as a quasi-member of the medical profession.

This boy—for he was but a boy when he died—moved in a consistent way. He was an enthusiast, but he was not a sensationalist. He fought the battles for his cause with the faith of an optimist and the unflinching courage of a devotee, but he kept his feet always upon the firm foundation of truth; he depended always upon demonstrable facts as his most efficient weapons of attack. He attempted no short cuts in order to reach a desired end, preferring, if needs be, temporary defeat.

During the several years that he was the active officer of Oklahoma Public Health Association, that organization grew to be a well organized working body. During that time he was untiring in his efforts to secure the State Sanatoria for tuberculous patients, and he lost no opportunity to espouse and actively help every kindred cause.

The life work of Jules Schevitz was a wonderful, inspiring romance; his death a bitter, heart-breaking tragedy. With determination and industry, he marshalled the passive friends of public health into a militant army of active workers, but now, while we weep, his young life is laid down as a sacrifice.

He is dead, and yet he lives—he lives in the memory of the medical profession of this State on account of his potent work in the interests of true scientific endeavor; he lives in the hearts of his co-workers in the Association whose activities he directed; he lives—yes, he lives—in the gratitude of the victims of the white plague for whom he did so much to provide proper care and treatment.

To his mother who, in the face of seemingly insurmountable difficulties, made it possible for him to secure an education fitting him for the important work that he accomplished, we extend our heartfelt sympathy. We wish her to know that we mourn with her, and that the members of Oklahoma County Medical Society pledge to her any assistance and encouragement they may be at any time able to

render. In accordance with the wishes of the Society we represent, a copy of these expressions is sent to her as an earnest of our faith and intentions.

Carrying out the further wishes of our Society, these expressions will be spread upon our minutes, and copies sent to the Journal of Oklahoma State Medical Association, and to the newspapers of Oklahoma City.

Committee LeRoy Long, Ray M. Balyeat, Tom Lowry.

Editorial Notes—Personal and General

Dr. G. L. Johnson, Pauls Valley, is in Chicago, attending the clinics of that city.

Dr. J. W. Craig, Vinita was called to Colorado by illness of his daughter in February.

Dr. and Mrs. Claude Thompaon, Muskogee, visited San Antonio and other South Texas points in March.

Dr. W. G. Bisbee, Chandler, for many years a practitioner of that city is locating in Bristow. He will office in the Conge Building.

Dr. W. E. Lamerton, Enid, had the good fortune to recover his "Fliver," loss of which he had mourned since December. It was located in Stillwater.

Vinita's State Hospital has just had the new \$100,000 addition opened for reception of patients, the state Board of Affairs having accepted the work.

Dr. Martha Bledsoe, Chickasha, was a delegate to the Kansas City convention of Business and Professional Women's Clubs, held in that city in March.

Dr. A. Ray Wiley, Tulsa, suffered the loss of a suit alleging malpractice when a jury in the District Court at Tulsa returned a verdict for \$2,000.00 in favor of the plaintiff.

The Enid Institute For Feeble-Minded Children is given a full page containing cuts and descriptive text of the institution's work in the *Enid Daily News* of March 12.

Carter County Society members are holding conferences looking toward establishment of a county hospital at Ardmore to serve increasing needs of the county's indigent wards.

Dr. Ernest Ball, Antlers, President of Pushmataha County Society, is in Ebano, S. L. P., Mexico, where he has property interests. He writes the JOURNAL that he will be absent several months.

Dr. G. Y. McKinney, Henryetta, recently won the Shriners ring at a Muskogee meeting of the order. His winning slogan was: "He kills, but never cures." That took all the fight out of his opponents.

Major R. B. Hill, Medical Corps, U. S. A., has been ordered to Oklahoma City, which place is designated as his headquarters as Executive Officer 320th Medical Detachment, according to press dispatches.

Dr. Sealr Harrie, Birmingham, has advised the JOURNAL of his inability to attend as an honored guest the Oklahoma City Meeting, May 9-11. This message will bring regret to many Oklahomans who know Dr. Harrie best.

Tulsa's City Hospital will be erected by The Universal Construction Company, Coffeyville, Kansas, whose bid was \$41,180.00 or \$3,000.00 less than their nearest competitor. Plumbing and heating will be installed by another firm whose bid was \$14,453.38.

Dr. LeRoy Long, Dean, and Mr. Paul Pesler, Superintendent of University Hospital, Oklahoma City, attended

the February meeting of the Council on Health and Public Instruction and The Federated Association of State Medical and Licensing Boards, held in Chicago.

Dr. Thos. L. Dowdy, Wilson, is defendant in a personal injury suit, the petitioner alleging in separate suits that she and her niece were severely injured when an automobile, property of Dr. Dowdy, driven by his niece, struck them as they were crossing a street in Wilson.

Messrs. Grant Victor, Horace Hagen and H. B. Fell, members of the Soldier Hospital Location Board were rendered a banquet at Muskogee, March 6, by the various civic and commercial organizations of the city, as a recognition of their gratitude on the selection of Muskogee as the hospital's location.

Drs. J. M. Byrum, Shawnee, and D. W. Miller, Blackwell, represented the State Board of Medical Examiners of Oklahoma at the Chicago meeting in March of the Council on Medical Education; Federation of Medical Examining and Licensing Boards and the various allied boards scheduled for meetings on those dates.

Dr. T. H. McCarley, McAlester, Chairman of the Section on General Medicine, Neurology, Pathology and Bacteriology, is the "early bird" in the 1922 class. Harking the S. O. S. issued from the Secretary's office to "hurry," he evidently has no grass under his feet, for his report of March 25, carried fourteen tentative numbers for his section.

"**GOOD OLD DOCTOR FITE**" one of the best surgeons and poorest politicians that ever made Muskogee his home, equally lovable and gullible, has agreed to make the "race" for mayor. This is the compliment paid Dr. F. B. Fite, Muskogee's foremost citizen and surgeon. While some might call it of doubtful verbiage, after all, the same may not be said of most of us. He went down in honorable defeat to the tune of 650 majority.

Dr. Chas William Heitzman and Mrs. Jane Gray Thomas, Muskogee, were married at San Antonio, February 7. Reverend Kemp, St. Mark's Church, officiating. They will be at home at 555 North 11th Street, Muskogee in the future. The JOURNAL extends to the happy couple its sincere congratulations and felicitations. Dr. Heitzman, it will be remembered, is one of the JOURNAL'S best aids, serving as Associate Editor.

The National Board of Medical Examiners, Dr. J. S. Rodman, Secretary, Philadelphia, announces the date of their next two examinations as follows:

Part I and II, June 19, 20, 21, 22 and 25.

Part I and II, September 25, 26, 27, 28 and 29, 1922.

Full information may be had on application to Dr. Rodman, Medical Arts Building, Philadelphia. Applications, however, should be filed not later than May 15 and June 1, for the respective examinations.

State Hospitalization for Criminal Insane is urged as the "one thing, if any, most needed by the State of Oklahoma," according to Dr. G. A. Waters, Warden of the State Reformatory for Boys at Granite, in an Oklahoma City interview. There is hardly a man in our State more conversant with the crying needs of these matters, than is Dr. Waters. His interest in his wards is evidenced by constant activity and most sympathetic appreciation of their peculiar problems and their nervous make-up. That treatment, not incarceration as ordinary criminals, has long been known to be the proper course to pursue toward these unfortunates by the professional man who has given thought to the matter.

Vinita State Hospital has just opened its new \$100,000 hospital addition. The management is to be congratulated in this final successful culmination of a long, at first, hopeless struggle to have this needed addition made to the overcrowded hospital. Incidentally, while we are on the subject, it is commendable that this class of state (political) institutions in Oklahoma have been remarkably free from the baneful effects of disturbance by the "policical powers"

It has not been thought good form as yet to be necessary to have a clean sweep of officers of these various eleemosynary institutions. All of them have been remarkably free from upheavals, Enid and Dr. Kendall excepted. Norman and Vinita still possess as efficient, appreciated superintendents, Drs. Griffin and Adams. May their directing shadows not grow less, or their influence for good wane. Above all, may it be the prayer of all medical men that these and other god servants of the State remain undisturbed to carry on.

The American Proctologic Society, Dr. Ralph Jackson, Secretary, Fall River, Mass., announces that that body will meet in St. Louis, Hotel Claridge, May 22-23, 1922. The program carries a formidable list of attractions among which are: "A TRIBUTE to Dwight M. Murray," by Dr. Jackson; "A Scalping Operation For Abscesses About The Rectum," Walter Fansler, Minneapolis; "Value of Temporary Colostomy," Hirschman; "Aseptic Local Anesthesia-Preliminary Report of Sub-mucous Sphincterotomy in Treatment of Anal Fissure," E. G. Martin, Detroit; "Papilloma of The Rectum," Harry B. Adams, Philadelphia; "Electrolysis and Ultra-Violet Light in The Treatment of Certain Rectal Affections," Harold E. Dunne, Washington. There are many others, but limited space prohibits further notice, and this is indicative of the general class of offerings for the occasion.

Okmulgee Business Firms furnishing supplies for the care of persons infected with smallpox and in an emergency have had to follow the usual course connected with such matters—sue for their generosity—as no funds are available to the officers for such care. Common sense would indicate in fact men of business acumen, would make due provision for just such emergencies as is constantly presented by these epidemics, not so our political mentors, not even will they permit the sane suggestion that one part of an unexhausted fund in a department be used for the care of charges of the same department, if they happen to belong to anyone of the numerous "Bureaus" into which the department may be divided. So it goes, we foolishly follow the same old antiquated custom, fitting or not, handed us by our forefathers. If ever common-sense were needed, it is in these very matters.

Dr. W. A. Lynott, Bartlesville, "Spreads our Name Afar," according to The Bartlesville Examiner "Even to Gotham's Great White Way," Dr. Lynott is supposed to have unburdened himself of this opinion:

For the second time Dr. Lynott has foregathered with the talented scribes of the New York Evening World and has unburdened himself of an opinion regarding prohibition which is published under the general heading: "Business Men from all Over Country Discuss Prohibition," and is as follows:

Dr. W. A. Lynott, Bartlesville, Okla., at the Astor—"I believe that prohibition has made drunkards out of people who never drank before. After two years it has been found that prohibition does not prohibit. I believe we should permit the manufacture and sale of whisky, but not go back to the saloon. People drink alcohol and home brew and will continue as long as they cannot get whisky. As a physician, I think that whisky is one of the greatest stimulants we have when properly used."

Drs. A. P. Gearheart and Wm. Leslie, Blackwell, recently lost a suit alleging malpractice on their part, when the jury returned a verdict for \$10,000.00. Unquestionably this verdict will be set aside by the Supreme Court, even should the application of the physicians' attorneys for a new trial be denied by the Kay County Court trying the case, and which it is alleged, permitted many irregularities to pass unchecked. The utter injustice of this decision will be understood at once on knowing that Dr. Gearheart's only connection with it, was that of a consultant, seeing the case only once, tendering his advice, withdrawing and never again seeing it or by any possibility assuming charge of or responsibility for the care of the case. That the "Earmarks" of surrounding circumstances also indicate the inexcusable

fact that it was inspired by fellow medical practitioners lends enough nauseating color to fill the mind of honest practitioners with disgust and cause a proper feeling of humiliation.

Oklahoma's Magnificent Erected Graft-Free, will house the Annual Meeting, May 9-10-11. Opportunity to have some of our members who have never seen our Capitol building, pay it a respectful visit of admiration, prompted your Secretary's efforts to secure the entire 4th Floor of the building for the occasion. The strong argument that ours is one of the very very few great state buildings erected "within the money," without the taint of graft, clinched the selection. The State Board of Affairs and General Charles Barrett, Adjutant General and Custodian of the Building, generously met the issue without strings of reservations attached, so we shall have every phase, sections, registration, exhibits, spread out on one floor, and it goes without saying that elbow room will not be required for any purpose. The Huckins Hotel, downtown, will have a sub-registration desk and "Greeter" and information desk, but otherwise the work will be grouped compactly and conveniently as never before our good fortune. We are filled with pride and satisfaction on the selection.

Tulsa County Society accepted invitation from the Y. W. C. A. to hold their meeting of February 27 at the "Y" building, incidentally to have opportunity for observation at first hand the various departments of physical culture education. This was prompted by the Physical Education Department's idea to acquaint the medical profession with the comprehensive system in vogue. Dinner was served at 6:30, after which Dr. Edward Burns, Kansas City, presented a paper on "Phases of Urological Diagnosis," which he illustrated with slides.

Program on March 13 calls for "Convalescent Serum in the Treatment of Scarlet Fever," Dr. D. O. Smith; and "Epidemiophytosis," by Dr. C. H. Ball.

Notice of change of date of Annual Meeting was given announcement by the Secretary, Dr. C. S. Summers, as was the urge that members prepare to attend the St. Louis meeting, for which occasion, no doubt, reduced railway rates would be offered. Near proximity of the meeting was also urged as a rare opportunity to Oklahomans to attend the National meeting. March 27 Dr. Jas C. Braswell, introduced as a new member, read a paper on "Cardiospasm." THE JOURNAL notes and gratefully acknowledged the cooperation rendered it by the Secretary of Tulsa Society. Especially helpful is reproduction of much of the matter contained in routine letters mailed county secretaries, dates and special announcements of interest to the membership.

Osage County Medical Society, meeting at Pawhuska, March 20, is reported by Secretary, Dr. Leonard Williams, to have "pulled off" the affair with the greatest eclat, that it was a success is evidenced by the tone of enthusiasm couching Dr. Williams' letter. First, a postmortem was held on a subject whose death was due to morphine poisoning. Autopsy disclosed that the man had a double pneumonia, which plus an over dose of morphine, produced death. Dr. Horace Reed, Oklahoma City, read a paper on "Pathology and Treatment of Acute Appendicitis," Dr. A. D. Young, Oklahoma City, a paper on "Hysteria." The program was rounded off with an eight course banquet, which is described as "some feed." The officers, not satisfied with the state of delinquency of many members also took occasion to urge them to get into harness, to be "one of the boys," and as an added inducement, advised that on April 10, Pawhuska, City Hall, another meeting would be held, which, among other attractions would offer a paper by Dr. A. A. Will, Oklahoma City, on "Cancer of the Rectum and Colon" and one by Dr. Wm. Taylor, Oklahoma City, on "Infant Feeding" or some other phase of Diseases of Infancy. The progressiveness of Osage Society is actual demonstration of the effect on the local profession of selecting a secretary who will accept and carry out his duties in more

than an indifferent manner. Dr. Williams is just such an electrifying force as is needed in many centers of our State, which though plentifully supplied with high-class medical men, lacks some one with the necessary enthusiastic initiative to bring them together as they should be if they are to attain their highest worth to themselves and their colleagues.

State Industrial Commission.
Oklahoma City, Okla.
March 1, 1922

Dr. C. A. Thompson,
508 Barnes Building,
Muskogee, Oklahoma
My dear Dr. Thompson:

I thank you for your letter of February 25th which came to the desk in my absence.

I have given critical attention to your letter and to the copy you were good enough to enclose, the original of which you sent to Dr. Schwab.

Any physician who feels that he is entitled to a greater fee than the Commission allows him should file a motion asking that his claim be set down for hearing. In this manner he will be afforded an opportunity to be heard and to explain item by item his bill. We appreciate the fact that oftimes hills appear to be excessive, but when the facts are known the charge which the physician made would be clearly justified.

Dr. T. A. Buchanan, of this city, is our medical adviser. With regard to medical hills he and some of the Commission usually review them when they are challenged by the adverse party. We then give our opinion as to whether the bill is reasonable. This opinion however, is not conclusive and the physician, or the other party, may be dissatisfied with our conclusion. In that event they may ask for a hearing, which, of course, would be granted. Under this procedure any doctor has the right to be heard, which right is always respected.

And in connection with this matter, I think it pertinent here to state that we do not limit the medical charges to \$100.00. It is true that the statute provides that no charge shall be in excess of \$100.00 unless approved by the Commission, but we invariably order all necessary medical treatment regardless of its cost, and we have tried to make this fact understood by all parties who may be concerned. All the casualty insurance companies doing business with us do understand this to be our attitude. In other words, and in brief, whenever a man is injured we require that medical attention be given him until he shall have recovered.

Cordially yours,
Baxter Taylor
Chairman

Honorable Alice M. Robertson, M. C., Oklahoma, Muskogee, has been and is recipient of many congratulatory notices which approve and applied her sterling independence and stand on the Sheppard-Towner fiasco. The JOURNAL takes pride in reproducing the resolutions appended below, passed by the Peoria (Ill.) Medical Society. In passing our membership should be advised also that the following Oklahoma Congressmen voted for this inconsistent, farcical, useless measure, voted for it unquestionably without rhyme, or reason and in the face of clear violation of all National precedents heretofore established. They voted for it fully aware, or should have been, that they were establishing the most dangerous precedent ever before undertaken by Congress, one, if followed in spirit in the future, will make our laws so paternalistic, so meddling with the rights of the individual, that Prussianism will look like great liberalism in comparison. J. C. Pringle; Swank; Gensman, McClintic. Representatives Chandler, Carter and Herrick are recorded as "not voting."

The Peoria Resolution, forwarded your JOURNAL, is. Whereas, the Peoria City Medical Society is honored tonight by the presence of one of the leaders of our National law making bodies, who has demonstrated by her actions that she cannot be influenced in her duties by the popular

clamor of the Representatives of a large percentage of the women of this country. This was demonstrated by her able and fearless opposition to the notorious Sheppard-Towner Bill which was sponsored and demanded by a large number of misinformed and misdirected well meaning ladies; and

Whereas, she was one of the few who had the courage, in the face of this enormous demand, to not only vote but fight for what she knew to be right.

Be it resolved that the Peoria City Medical Society extend to her our thanks for opposing what she and we believe to be one of the most pernicious bills that has ever been introduced in the House of Congress and we promise the Hon. Alice Robertson, our guest of the evening, the undivided support and fidelity of this society at any time that she may wish to call upon us and we wish to move the adoption of these resolutions by the society and that a copy of them, together with an appropriate token, be presented to her before the meeting of the Young Mens' Republican Club, which she is to address tomorrow evening.

Respectfully submitted,
S. Horwitz, Chairman Com.

WHERE'S THE HUMANIZER?

Chicago Postoffice Shows Need for Closer Observation

Chicago, March 14.—A well dressed man, unknown to any of the clerks, walked into Postmaster Lueder's office yesterday.

"Son, may I see Mr. Lueder?" he asked a clerk.

"He's busy; sit down," was the answer.

The gentleman waited 15 minutes. Then:

"Son, do you suppose I could see Mr. Lueder now?"

"No, he's still talking to a bunch of clerks."

"Well, you take him this card," said the stranger.

The clerk looked at the card. On it was:

"Dr. Hubert M. Work, postmaster general."

DOCTOR K. L. COLLEY

February 27th there was removed from his sphere of usefulness, a man and a physician, who measured up to the extreme standard of each. Dr. Colley was a physician in the truest acceptance of its term. That Barnsdall fully appreciated his worth was evidenced by the deep mourning of his City. Among the many worthy deeds of this physician may be mentioned the wonderful work which he did for his fellow citizens in the cyclone of 1911, when he not only worked untiringly until order was brought out of chaos, but personally took thirty-nine of the victims of this storm to a hospital in Tulsa. His record would not be complete without mentioning his valuable services that were rendered to his Country in the late war. Dr. Colley is survived by his wife, two daughters, four sisters and three brothers. He was born in Virginia and had been a resident of Barnsdall for the past fourteen years.

DOCTOR WILLIAM C. PENDERGRAFT.

After an illness extending over a period of years Dr. Pendergraft of Hollis, Oklahoma, passed away February 20, 1922. Dr. Pendergraft was one of the pioneer citizens of his community, having lived in his present location for more than twenty years. He was a man who had a firm hold on the affections and respect of the people of his town and county. He was born in Polk County, Missouri, September 22, 1864, and in 1892 graduated with the degree of M. D. from the Physicians & Surgeons College of St. Louis, Mo. His wife and two sons survive him, one, Dr. Roy Pendergraft, a practitioner of medicine in Hollis, and Glenn Pendergraft, a student in the University of Oklahoma. Perhaps the full story of his life may be told in the words of the text selected for his funeral oration: "Luke, The Beloved Physician."

Report of the Dean at a meeting of the Faculty of the University of Oklahoma, School of Medicine, President Brooks in the chair.

Oklahoma City, Okla. March 16, 1922.
Mister President and Members of the Faculty:

Since our last meeting there has been a healthy growth of the School of Medicine.

Under the wise supervision of Dean Turley, the work at Norman has been as satisfactory as it could be with inadequate housing and the rapidly increasing number of students.

This term began with an enrollment of 110 students in all departments, there being 37 in the Freshman, 33 in the Sophomore, 25 in the Junior and 15 in the Senior Class. Through the weeding-out process five have been lost from the Freshman Class, three from the Sophomore Class and one from the Junior Class.

There are no women students in the Freshman, Junior and Senior Classes, while there are four registered in the Sophomore Class.

So far as is known, there has not been a single irregularity, even of a trifling character, in the enrollment of students. Many applications for advanced standing have been made by students with conditions, most of them minor, from other schools, but not one has been accepted. In at least one instance, such a student was accepted by an old established "A" school after we had declined to take him.

In the clinical years, the work has been more uniform and satisfactory than it has been at any previous time. This statement applies to both the Faculty and student body. In the matters of apparatus and betterments, the clinical years have been favored much more than the pre-clinical years. Not only do we now have a well equipped laboratory with all the facilities for good work, but in addition there have been installed an electro-cardiograph and a metabolism unit. To this may be added, betterments in the X-ray and other departments. Besides there is now at the hospital an adequate supply of radium purchased at the expenditure of about \$20,000.00 appropriated by the Legislature for that purpose.

I have just returned from the Congress on Medical Education, which was combined with the annual meeting of the Association of American Medical Colleges. At that important matters pertaining to medical education were considered, among which the following are of interest to us:

1. There was unanimous opinion that all medical students should be together and in close relation with the hospital. It was urged that the medical student from the very beginning of his work in the Freshman year be placed in a position so that he can see patients in hospital and observe, to at least some extent, the practical application of his studies.

2. Great emphasis was laid upon the disadvantage to all concerned in considering the fundamental work of the first two years as being detached in any way from the work of the last years in medicine, it being pointed out that there should be correlation and co-operation throughout the entire course.

3. Attention was called to the desirability, if not the necessity of placing more emphasis upon clinical investigation by the proper use of the trained special senses. While there was no disposition to minimize the value of laboratory procedures and instruments of precision, the danger of depending upon these aids to the exclusion, more or less, of clinical investigation by the use of the trained special senses was made quite clear.

4. A committee on curriculum made a report recommending a tentative allotment of time to the various departments. This plan was based upon a four years' course of about 4000 hours, and the time allotted to each department is a certain percentage of the entire time distributed in such a way that the total allotted time will be about 75%, leaving 25% of the time to be employed by the student in elective work—time in which he has liberty to do quite as he pleases in the matter of selecting his studies.

The following percentages for the various departments were suggested in this tentative scheme:

Anatomy, including dissection, histology, neuro-anatomy, embryology, topographic anatomy, 14 to 18 percent.
 Physiology, 4 1-2 to 6%.
 Biochemistry 3 1-2 to 4%.
 Pathology, bacteriology and immunology 10 to 13%.
 Pharmacology, including materia medica and toxicology 4 to 5%.

Preventative medicine and hygiene 3 to 4%.

As will be observed, the subjects just mentioned are covered in the work of the first two years, and certain prerequisites are laid down. For instance, the course in biochemistry must have, as a prerequisite, work in general chemistry, qualitative analysis, organic chemistry and quantitative analysis.

The time allotted to general medicine, including neurology and psychiatry, pediatrics, dermatology and syphilis, is 20 to 26 1-2%.

General surgery, including orthopedic, G. U. Surgery eye, ear, nose and throat and roentgenology, 13 to 17 1-2%.

Obstetrics and gynecology 4 to 5%.

It will be observed that the Committee on curriculum divided the work of the clinical years into three general departments, namely, Medicine, Surgery, and Obstetrics and Gynecology.

The work of the committee was closed with the following notes:

Dissection: There is much variation above and below this average time. Some Class "A" schools are devoting 25% less than this average time to Gross Anatomy and Osteology and this variation in Class A schools should be recognized and accepted without prejudice.

Embryology: It is recommended that Embryology be transferred to the premedical course provided the course be under the direction of a well trained embryologist and includes, as part of the laboratory work, a study of mammalian (pig) embryos of selected ages, in addition to the usual chick embryos.

Obstetrics: Add care of 10 cases and 2-4 weeks of combined ward service.

5. Another important question had to do with the amount of time devoted in the average course to the specialties. It was emphasized over and over that the medical school is run for the purpose of making physicians and not specialists, and it was recommended that a readjustment be made so that the student may be relieved of some of the technical load which he carries under the present system. In order to develop the specialties in the medical school, the consensus of opinion was that proper post-graduate courses be established for the teaching of them.

6. While no formal action was taken, there was manifested a distinct tendency on the part of a good many members of the Congress, representing various schools, to give considerable freedom to the student, permitting him to go and come much as he wishes, especially in the last two years. The more sober and conservative stood for a definite minimum requirement, but all felt that the course as conducted now is too rigid, thus interfering to a considerable extent with the development of initiative, resourcefulness and logical reasoning on the part of the student.

7. The question of the 5th, or hospital year, was discussed, and the consensus of opinion was that it should be made a requirement in connection with medical education. It seems pretty clear that it is only a question of time until it will be necessary for the medical school to have such a requirement. Already a number of licensing boards require applicants for licensure to have had hospital training in addition to the medical course. At this time I wish to recommend that this school go on record as being in favor of the 5th or hospital year, and that the State Board of Medical Examiners be advised of our action, the requirement to go into effect in this school as soon as the Medical Practice Act can be changed so that the requirement will be uniform in connection with applications for licensure.

I am glad to report that the students of this school are now eligible for examination before the National Board of Medical Examiners. I assume that it is known that

such a Board was organized in 1915, beginning its work, I think, in 1916. It is operated upon a very high plane, and already 26 States have agreed to accept certificates from the Board, 10 other States having under consideration such an arrangement. I do not doubt that within a very short time certificates from this Board will be accepted by all the States in the Union. In addition, England and Scotland recognize the certificate with the exception of certain final examinations in prescribed subjects.

At present there is an arrangement thru which these examinations may be taken in three parts. The first part may be taken by the medical student after two years' work under the supervision of the Dean of the recognized school he is attending, and the second part may be taken after he has received the M. D. degree, and in the same way. The third and final examination is given by designated authorities in various parts of the country after the applicant has completed a year's work in hospital, the papers in all cases being sent to the headquarters of the National Board for final action. I trust that our students may be interested in the work of this Board, which I conceive to be of the greatest importance, since, as indicated above, a certificate from it will soon give the holder the right to practice medicine anywhere in the United States, besides certain rights in foreign countries.

We have been doing pretty well, but we need a good many things. The most important in my judgment, is adequate housing and increased facilities in connection with the work of the first two years. There is no doubt in the minds of any of us as to the high character of work being done by our Staff at Norman, but when visitors come and see the environment in which they have to work it is difficult for them to understand the character of work as we understand it. The President of the University has striven to do justice to all departments of the University, and we have been treated as well as any department—perhaps better than some. The truth is that the University is growing so fast that it is difficult for the different departments to have necessary room. Now that it seems to be the wish of all concerned that all four years should be on the hospital campus at Oklahoma City, I trust that there will be active work and co-operation on the part of the entire Faculty in trying to secure an appropriation from the Legislature thru which proper quarters may be constructed here. This is even more important now since the College Association has gone on record as not looking kindly upon a school with the departments geographically separated.

The Out-Patient department continues to develop in an extremely satisfactory way. In fact, I sometimes think that it would be better if we did not have quite so many patients. With the increasing number coming to the Dispensary it will be necessary to devise an arrangement thru which a good deal more time will be devoted to Out-Patient work. It is hoped that the schedule may be arranged so that this difficulty will be met, at least to a certain extent, during the next year.

At present, there are practically no opportunities for research in connection with our organization. It is unnecessary for me to say that this is a misfortune, and it is hoped that some arrangement may be made thru which this tremendously valuable work may be undertaken.

The Council on Medical Education and Hospitals is very cordial, and I believe now, as I have always believed, that we will be treated with exact fairness by that body. It goes without saying that the Council does not expect us to stand still, and in order to continue in favor it is necessary for us to be active and progressive.

Taking all things into consideration, I think I should say that I feel satisfied with our progress up to this time and in making that statement I have a very keen sense of my obligation to the President of the University and his wise supervision, and to the members of the Faculty and their hearty and unselfish co-operation.

LE ROY LONG,
 Dean.

MISCELLANEOUS

ANNUAL MEETING

Committees on Behalf of Oklahoma County Medical Society.

Executive Committee, Chairman, Dr. Wm. H. Bailey, 308 Patterson Building.

Entertainment, Chairman, Dr. Edw. P. Allen, 425 Liberty Nat. Bldg.

Publicity, Chairman, Dr. H. M. Williams, 524 Liberty Nat. Bldg.

Meeting Places, Chairman, Dr. M. M. Roland, 404 Patterson Bldg.

Exhibits, Badges, Hotels, Chairman, Dr. F. H. Clark, 313 Shops Bldg.

Clinics, Executive Chairman, Dr. C. J. Fishman, 735 American Nat. Bldg.

The following are designated by the respective hospitals to represent their institutions:

University Hospital, Dr. Wann Langston, University Hospital.

Wesley Hospital, Dr. D. D. Paulus, 308 Patterson Bldg.
St. Anthony's Hospital, Dr. R. M. Howard, 502 First Nat. Bldg.

Oklahoma City hotels are always filled to capacity, so it is the part of discretion to now make your reservations. You should state clearly in your communication the date and hour of your proposed arrival in that city, exactly the character of accommodations desired, that is bath, number in party, etc., and it might be well to indicate whether or not lesser space would be acceptable in event of unusual overcrowding. *All requests should be mailed at once to either the Hotel desired, the second choice, or Dr. F. H. Clark, Chairman, 313 Shops Bldg.*

Do not impose this service upon professional friends, for in the end, in order to serve the largest number with the highest efficiency, the committees having these matters in charge must be able to calculate the probable number to be expected.

Dr. E. S. Lain, President, Oklahoma County Medical Society, has announced the following as Committees from his Society to handle the Annual Meeting, May 9-10-11.

General Chairman of Arrangements—Dr. Wm. H. Bailey, 308 Patterson Bldg.

Entertainment, Chairman—Dr. Edw. P. Allen, 425 Liberty Natl. Bank Bldg., Oklahoma City.

Publicity, Chairman—Dr. H. M. Williams, 524 Liberty Natl. Oklahoma City.

Exhibits, Badges, Hotels, Chairman—Dr. Fred H. Clark, 313 Shops Bldg., Oklahoma City.

Clinics, Chairman—Dr. C. J. Fishman, 735 American Natl. Bank Bldg., Oklahoma City.

Clinics representing University Hospital—Dr. Wann Langston, University Hospital.

Wesley Hospital—Dr. D. D. Paulus, 308 Patterson Bldg., Oklahoma City.

St. Anthony's Hospital, Dr. R. M. Howard, 502 First Natl. Bank Bldg., Oklahoma City.

Meeting Places, Chairman—Dr. M. M. Roland, 404 Patterson Bldg., Oklahoma City.

Each Chairman "drafted" for the purpose by Dr. Lain, is empowered to even up matters by "drafting" such aids as he deems necessary to the success of the meeting.

THE ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION

The arrangements of the St. Louis profession for the meeting places for the Session of the A. M. A., which is to be held in their city May 22-26 next, are singularly fortunate and convenient; never has the Association been so well favored in this respect. The district in which the meeting is to take place is at the west edge of the business section of the city, easily accessible from all directions by street car or otherwise and not more than fifteen minutes street car ride from the most distant

hotel. The grouping of the meeting places is so compact that should one walk from the Registration Building (Moolah Temple) to the farthest hall it can be done in ten minutes or less; from section to section is a matter of from one to five minutes. The convenience of the location and arrangements of the different halls is more outstanding than in any other city in which the Association has met, and a decided improvement over the accommodations which were had at the meeting in St. Louis, 1910.

The Registration office, Post Office and Commercial Exhibit is to be in the Moolah Temple (Shrine), a beautiful and commodious building on Lindell Boulevard, two blocks west of Grand Avenue. At the other extremity of the group is the Odeon, the home of the St. Louis Symphony Orchestra, with a main hall which seats better than 2000, and several lesser halls. The main hall will be used for the opening session. Its acoustics are particularly good and suited to our purpose. The sections on Practice of Medicine and Diseases of Children meet here. In the assembly hall of the same building the Sections on Pharmacology and Therapeutics, and on Pathology and Physiology will meet. (It will be noted that there has been an aim to foregather closely allied sections.) The Sheldon Memorial, a very beautiful new hall on Washington Avenue one-half block west of Grand Avenue, which most admirably meets all requirements will be the meeting place of the Sections on Ophthalmology, and Laryngology, Otolaryngology and Rhinology. The Section on Surgery, General and Abdominal, and on Obstetrics, Gynecology and Abdominal Surgery, will be held in the Third Baptist Church on Grand Avenue, a situation well suited to the demands. The Sections on Orthopedics and Nervous and Mental diseases will meet in the Law School of the St. Louis University, on Lindell Ave., a few steps west of Grand. The hall easily seats 500 and is both comfortable and convenient. Dermatology and Syphilis and Urology will use the large Union Methodist Church, on Delmar Avenue just west of Grand, which meets every requirement. The Sections on Gastro-Enterology, Proctology and on Preventive Medicine will use the large hall in the Musicians Club on Pine Street, east of Grand Ave., and next to the building of the St. Louis Medical Society, where the House of Delegates will hold its sessions. The Section of Stomatology is assigned to the assembly hall of St. Peters Parish House, one block west of Grand on Lindell. Immediately in this district will be found three of St. Louis's most important Clubs, the St. Louis University and the Columbian. Restaurants catering to every grade of patronage are numerous in the district and precautions have been taken to insure that normal rates continue during the meeting.

The St. Louis profession is preparing for an unusual attendance; hotel reservations are coming in rapidly but it is proposed that even the late comer shall be comfortably housed. The wise traveler, however, makes his reservation as early as he finds it possible. Dr. M. B. Clopton, 3525 Pine St., St. Louis, is Chairman of the Committee on Sections and Section Work.

MEDICAL SOCIETY OF THE MISSOURI VALLEY

The annual meeting of this association will be held in St. Joseph, under the presidency of Dr. Paul E. Gardner, on September 21-22. The Buchanan County Medical Society at its last meeting appointed the following committee of arrangement: Dr. Floyd H. Spencer, chairman; Drs. H. W. Carle, Frank Harrigan, J. I. Byrne, H. S. Conrad, O. C. Gebhart, secretary. Members wishing to present papers should send in their titles to the secretary, Dr. Charles Wood Fassett, 115 East 31st Street, Kansas City, Mo.

ANNUAL MEETING—ORTHOPAEDIC MATERIAL

It is requested physicians having cases possibly needing orthopaedic attention communicate with Dr. Earl D. McBride, 1006-7 First National Bank Bldg., Oklahoma City, Oklahoma.

The UHs Clinics

Overland Park, Kansas.

For Nervous & Mental Cases.



North Wing-Main Building

Countless generations have rested
at this spring on the old trail-Safe
from the turmoil and strife of a
struggling world. ~ ~



CHAIRMEN OF SCIENTIFIC SECTIONS:

General Medicine, Neurology, Pathology and Bacteriology; Dr. T. H. McCarley, Chairman, McAlester.

Genito-Urinary, Skin and Radiology; Dr. M. M. Roland, Patterson Bldg., Oklahoma City, Chairman, Dr. Robt. S. Love, 830 American Nat. Bldg., Oklahoma City, Secretary.

Surgery and Gynecology; Dr. J. M. Byrum, Chairman, Shawnee.

Eye, Ear, Nose and Throat; Dr. C. M. Fullenwider, Chairman, Barnes Bldg., Muskogee.

Obstetrics and Pediatrics, Dr. W. W. Wells, Oklahoma City, Chairman, Dr. J. Raymond Burdick, Tulsa Secretary.

WESTERN ELECTRO-THERAPEUTIC ASSOCIATION.

The fourth annual meeting of this organization will be held, as usual, in the Little Theater, Kansas City, April 20-21. Dr. Curran Pope, of Louisville, is the president this year, and will give the annual presidential address on Thursday evening.

The program is now being made up, and will be fully up to the standard of the previous meetings held by this organization, whose watchword is progress. A number of men of national reputation will be present; among those who have responded to the invitation to read papers may be mentioned: Drs. James T. Case, Battle Creek; A. J. Pacini, Washington; T. Howard Plank, Chicago; William L. Clark, Philadelphia; Harry Bowing, Mayo Clinic; A. D. Willmoth, Louisville; J. D. Gibson, Denver, and others. Dr. Virgil C. Kinney of New York, president of the American Electro-Therapeutic Association, and Surgeon-General Cumming of the U. S. Public Health Service, have given us a partial promise to be with us, and all indications point toward a large attendance.

The banquet will be held on Thursday evening, and a number of distinguished speakers will be on the program.

The exhibit hall will, as usual, contain the latest word in equipment, and the exhibit alone will be worth a trip to Kansas City.

Dr. Grover's school of Electro-Therapy will hold its sessions, preceding our meeting on the 17, 18 and 19 of April, announcement of which will be found on another page of this issue.

CHARLES WOOD FASSETT,
Secretary.

THE MID-WEST ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

M. F. Jarrett, M. D. Pres., Fort Scott, Kansas.

Everett Powers, M. D. V-Pres., Carthage, Mo.

W. Albert Cook, M. D., F. A. C. S., Secy-Treas., Tulsa, Oklahoma.

Past Presidents, Dr. J. G. Dorsey, Dr. J. D. Pifer, Dr. E. M. Seydell, Dr. W. Albert Cook, Dr. T. A. Coffelt.

The annual meeting of the MID-WEST ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY will be held in Tulsa on Monday April 17, which is an

easy date to remember as it is the day following Easter Sunday.

We anticipate a very good meeting and I hope that you will honor us with a paper, the subject of which I would like to have by the first of April so that the programs may be printed in plenty of time.

Some of the members are coming to Tulsa on Sunday to enjoy a game of golf, and if you are a golf fiend, would suggest that you do the same thing, and I will arrange for a visitors card for you so that you can enjoy a days outing on one of the best golf courses in the country.

We will have some prominent men from the largest cities in our territory and want to make this the best meeting we have ever had, and expect to have every minute of the day occupied.

M. T. Jarrett, President.
W. Albert Cook, Sec'y-Treas.

ARKANSAS MEDICAL SOCIETY.

Office of the Secretary Editor.

Little Rock, March 1, 1922.

Dear Secretary-Editor:

The motif of our coming annual session to be held in Little Rock, May 17-19, next, is to be "the homecoming meeting" and we are very desirous of informing our old time doctors from Arkansas, now practising in other states, of this feature, and stressing the fact that we shall expect them to be with us at the time indicated. This will be especially applicable to those desiring to attend the A. M. A. Meeting at St. Louis; as they can stop off with us renew old acquaintances, and resume their journey.

We shall appreciate it very much if you will carry a suitable news item in your Journal, setting forth our good intentions, that those in your state may be reminded of the invitation extended to them.

This may seem unique; but in the ever changing present the unexpected happens daily. Therefore, we are relying on the cooperation and active assistance of our friends in putting this meeting over.

Thanking you in advance for any courtesy you may be able to extend, and trusting that we may have the pleasure of a visit from you along with the others from your state, we are

Most cordially yours,

Wm. R. Bathurst

Secretary-Editor.

NEW BOOKS

DISEASES OF THE EYE

New Ninth Edition

Diseases of The Eye. A Handbook of Ophthalmic Practice for Students and Practitioners. By George E. deSchweinitz, M. D., LL.D. Professor of Ophthalmology in the University of Pennsylvania. Ninth Edition, Reset. Octavo of 832 pages with 415 text-illustrations and 7 colored plates. Philadelphia and London: W. B. Saunders Company, 1921. Cloth, \$10.00 net.

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THE RELATION OF THE CLINICAL PATHOLOGIST TO THE PRACTICE OF MEDICINE.*

WANN LANGSTON, M. D.
Oklahoma City, Okla.

Clinical Pathology is a highly specialized branch of medicine which deals with pathological processes, anatomical, physiological or chemical, in their relation to the clinical manifestations of disease.

The Clinical Pathologist is a trained specialist who, having been well grounded in the fundamental and clinical branches of medicine, and having had hospital clinical training or its equivalent as necessary prerequisites, has given special study to Clinical Pathology in its relation to diagnosis, prognosis and treatment of disease.

Clinical Pathology more nearly approaches the status of an exact science than any other specialty of medicine. Yet the methods are so varied and so complicated, the limitations so numerous, and the results influenced by so many conditions existing in the patient, that the pathologist must not take his results at face value, but must consider them in the light of the history and clinical findings in arriving at a just opinion in any given case. In other words, the methods of the Clinical Pathologist are merely a means of eliciting additional symptoms which must be carefully and conservatively evaluated along with the other symptoms in making a diagnosis. In this respect, the status of Clinical Pathology is not different from that of any other specialty.

Functions of the Clinical Pathologist.

In a recent article McCarty summarizes the functions of the Clinical Pathologist as follows:

1. Confirmation of Diagnosis, of which the clinician might have had some suspicion.
2. The diagnosis of conditions which the clinician did not suspect.
3. The correction of clinical diagnosis.

*Read before a joint meeting of the Tulsa County Medical Society and the Oklahoma Serological Association, Tulsa, February 23, 1922

4. The confirmation of positive clinical diagnosis.

5. The recognition of accessory pathologic conditions.

6. The determination of stages in the course of disease.

7. The determination of the physical status of the patient preparatory to possible operation or other treatment.

8. Assistance in determining the extent of operations.

9. Determination of data for preoperative, operative and post-operative prognosis.

10. Determination of the cause of death in non-surgical and in surgical cases.

11. Determination of the cause of death due to incorrect medical or surgical judgment.

12. Determination of cause of death resulting from incorrect operative technic.

13. Assistance in determining causes and modes of surgical infection.

14. Assistance in clinical, surgical and laboratory research.

15. The actual treatment of disease.

Need For Complete History and Clinical Data.

A careful consideration of the above points reveals the intimate relationship of the work of the Pathologist to the Clinical status of the patient, and the necessity of having full and complete clinical data as a basis for his work and opinion. Unfortunately, this is not as fully appreciated in some localities as it should be, and it is now my purpose to point out in a few specific instances the necessity for the Clinical Pathologist to see the patient or to have furnished him essential clinical data.

In such an every day procedure as the Wassermann reaction, there are so many factors modifying the results that it is a well known fact that a positive Wassermann may not mean syphilis, and a negative result does not rule it out. So the question is no longer, does this patient have a positive or a negative Wassermann, but does he have syphilis, or if it is known that he has had the disease, is he free or not? In order that one may give

an answer based on scientific reasoning, it is not sufficient that he be furnished a specimen of blood.

What are some of the factors influencing this reaction? The ingestion of small quantities of alcohol may render the substances responsible for the reaction inert for as long as three days; during active treatment or following a single intravenous treatment a positive blood may react negatively for a variable period; the time of appearance of a positive reaction varies from one to six weeks following the appearance of the primary lesion, while in a small percentage of cases the serum never reacts positively; many cases of congenital syphilis give a negative Wassermann at birth and a positive later; cases of latent syphilis may give a negative which on proper provocative treatment may change to a positive. An infant may show a positive reaction while the mother is negative; but healthy mothers do not give birth to syphilitic children. On the other hand blood drawn during or following ether anesthesia may exhibit a false positive reaction; the same is true of blood drawn during a malarial paroxysm, during the course of pneumonia, scarlet fever, and profound sepsis; and negative blood becoming contaminated with certain strains of streptococci and staphylococci may change to a positive. In untreated cases of syphilis there are fluctuations from day to day in the reaction, so that a weakly positive today may be positive or negative tomorrow; some cases are Wassermann fast (will not give a negative reaction however long treatment be continued) while some strains of spirochetes seem to be mercury fast or arsenic fast; in some cases the Wassermann reaction becomes negative very rapidly following treatment, while a more delicate test will reveal the case still positive; some cases of syphilis persistently give a negative Wassermann but if clinical findings warrant some other test, as colloidal gold on spinal fluid may reveal the true state of affairs.

Since it is necessary for the Pathologist to keep all these facts in mind in arriving at a conclusion in any given case, you can realize how very important it is for him to have all clinical data in connection with the case.

Functional Diagnosis has taken a prominent place in the practice of medicine and surgery in the last few years. This is one of the most important fields of the Clinical Pathologist.

Whether the problem be one of the kidney, the gastro-intestinal tract, or the endocrine system, it is not sufficient to carry out a certain test and attempt to make a diagnosis. If there is a retention of uric acid in the blood, it is very important to know whether the clinical findings and history point to a func-

tional derangement of the kidney or to a gouty condition.

We hear a good deal about the "Cancer Curve" and the "Typical Carcinoma Curve" in the glucose tolerance test. Every Clinical Pathologist knows there is no such curve. He knows that failure to establish a certain type of curve is evidence against malignancy; but that the same type of curve is found in a good many other conditions, notably tuberculosis, thyroid condition, etc. In such a case it is of the utmost importance to know something of the patient's history which may point the way to the true interpretation of the laboratory findings. To the Clinical Pathologist a high metabolic rate does not mean a hyper-functioning thyroid. He must know the conditions surrounding the experiment, the previous condition of the patient and the present mental and physical state. A certain finding may mean something entirely different under one set of conditions than it does under another. So simple a thing as an apparently normal leucocyte count may be an important diagnostic point, or even of grave prognostic significance when considered along with the other symptoms. For example, a normal leucocyte count is the usual early finding in cases of gangrenous appendix.

In the matter of tissue pathology it makes a great deal of difference whether the pathologist knows something of the patient, the age, sex, location and gross appearance of lesion, history of onset and progress; the particular area sectioned, etc. It is far better for the pathologist to have the entire specimen removed, with definite description of land marks, so that he can select his own area for study. It is a well known fact that many areas of a tumor for instance, owing to inflammatory reaction, etc, do not show the characteristic features, and hence the result may be misleading. Sections removed at operation for quick diagnosis are frequently unsatisfactory, and it is far better to have the Pathologist present so that he may select the most favorable areas, as well as get a correct notion as to the gross pathology, etc. I have in mind an instance where a specimen from a tumor of the transverse colon was sent to the laboratory and revealed only inflammatory tissue. The Pathologist hurried to the operating room and pointed out the area that to his mind was most promising, and this tissue revealed the presence of an Adeno-Carcinoma. I have seen sections of breast which show normal tissue, mastitis, adenomatous changes and carcinoma all in the same slide. Obviously an examination of a single area taken at random might be of serious consequence. Not only is the examination of the characteristic portions of the process necessary, but the character

of the tissue at the periphery is of great diagnostic and prognostic significance.

To my mind one of the most important oversights in the diagnosis of disease is the failure of the clinician to avail himself of the services of the Clinical Pathologist in the matter of carrying out further examinations which are naturally suggested to him by the results in a given test. Every pathologist appreciates the fact that it is a pernicious habit to accept his results at face value without any consideration of other symptoms except in the very few cases in which the laboratory findings are pathognomonic; and he carries out but few procedures in which the results do not suggest further confirmatory tests that will greatly aid in clearing up an obscure condition. To illustrate: An examination of a night specimen of urine may reveal nothing but a low specific gravity. This occurs frequently. This is a most suspicious symptom which immediately suggests the determination of the question of fixation of specific gravity. Having determined that there is but slight fixation, a careful examination of the blood for nitrogenous waste retention should be carried out under proper conditions. In many cases it is found that a patient has severe nephritic involvement without the presence of either albumin or casts in urine. In like manner, a severe diabetic may show no urinary symptoms, and many cases of glycosuria are not diabetics. These matters can be accurately determined by proper laboratory methods alone.

One of the important functions of the Clinical Laboratory is the accurate check on and guidance of treatment in such conditions as nephritis, diabetes and thyroid conditions. While the laboratory findings in these cases should not be relied upon exclusively, they certainly should not be neglected if we are to serve the best interests of our patients; and in the practice of medicine the patient's welfare is always the primary consideration and every other thing should be subordinated to it.

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DETERIORATION OF NEO-ARSPHENAMIN

Commercial neo-arsphenamin, George B. Roth, Cleveland (Journal A. M. A., April 22, 1922), states is a relatively unstable substance in the ampoule. Temperature is a potent factor in causing its deterioration. It is advisable to keep it under storage conditions similar to those required for vaccines, that is, at icebox temperatures, until all the factors concerned in causing the deterioration of the compound are understood.

WHAT DOES THE INTERNIST EXPECT OF THE LABORATORY.*

W. FORREST DUTTON, M. D.
Tulsa, Oklahoma

The subject, what does the internist expect of the laboratory, is vague and permits of various interpretations. It is assumed that it means cooperation between the laboratory and the physician for the accomplishment of specific results in the diagnosis, prognosis, prevention, and cure of disease.

From the dawn of civilization to the present day, physicians have lived, worked, and died in their endeavor to alleviate the suffering of mankind. They have traveled the mist covered valley that flows between the cold barren mountains of empiricism and fact. After centuries of labor, consecrated to humanity, medicine is now emerging upon the golden plains of exact science.

The history of medicine is a record of self sacrificing labor of physicians in their combat against the inadequacy of medical knowledge in its struggle with the laws of nature; yet cast your eye, if you will, to the unwearied struggles of the physicians of all ages. These efforts were to investigate those laws, and to appropriate to the healing and blessing of suffering humanity the knowledge already acquired, or to be acquired.

A brief reference to history shows that many diagnostic, preventive and therapeutic measures were initiated in remote antiquity. Among these are, diagnosis as practiced by the Egyptians; preventive medicine as employed by the ancient Hebrews; and therapeutics as administered by the Medes and Persians. Venesection and inoculation were practiced by the Chinese some 2000 years before the Christian era.

Optics or the microscope was invented by Jan Lippersheim in Middelburgh, in 1608.

The birth of the idea of parasitic origin of disease followed closely the invention of the microscope. The first observations on bacteria were made about the middle of the seventeenth century. About the middle of the nineteenth century microscopic investigation added much to the knowledge of medicine by the discoveries of Goodsir (saracina ventriculi) Keber (fungus of vaccine virus), and Pollender (bacilli of malignant pustule). The last quarter of this century was made historic by the discoveries of Koch (bacillus tuberculosis, 1882); (cholera fungus, 1885), Klebs (intermittant fever and pneumonia), Neisser (gonorrhea), Letzerich (diphtheria), Ziehl, Fried-

*Read before a joint meeting of the Tulsa County Medical Society and the Oklahoma Sociological Association, Tulsa, February 23, 1922

lander, and Pfeiffer. The more recent discoveries relative to infectious diseases are familiar to all students of medicine.

The discovery of the circulation of the blood by Harvey, in 1616, and the subsequent discovery of the capillary circulation by Malpighi, in 1616, and of the blood-corpuscles (1665), had a marked influence on the progress of medicine. The work of Molyneux (1683), Leeuwenhoeck (1688), and Cowper (1687) on the capillary current, blood-corpuscles (including white corpuscles), and the capillary connection of arteries and veins did a great deal to simplify the study of the circulation. The transfusion of lambs' blood was performed by Purmann and Kaufmann in Germany, 1668. Lower and King, of England, in 1667, were the first to succeed in the transfusion of human blood.

Since the pioneer work of Leeuwenhoeck great advances have been made in microscopy. The scientific use of the microscope has reduced the study of histology, physiology, and pathological anatomy to their simplest forms.

Cytology.

It is assumed that the laboratory worker of today will have perfected himself in the technic of cytodagnostic methods. He should be able to distinguish four main types of fluids: (I) exudates in acute infections of the serous membranes, (II) exudates in tuberculosis serositis, (III) transudates, and (IV) effusions associated with neoplasms.

Chemical Changes in the Blood in Disease.

A knowledge of the chemical changes in the blood in disease and their significance is of inestimable value in diagnosis and prognosis. For this reason, the physician requires that the laboratory have reliable methods for the estimation of blood volume, the blood proteins, serum albumen and globulin, improved methods of hemoglobin estimation, methods for the determination of non-protein nitrogen and its individual components, urea, creatinine, uric acid, amino acid nitrogen, creatine, and ammonia; methods for the mineral constituents, chlorides, phosphates, calcium, magnesium, potassium, and iron; methods for blood gases, carbon dioxide and oxygen, and methods for hydrogen ion, the acetose bodies, phenol, and such enzymes as diastase, catalase, etc.

These methods have yielded helpful information in diabetes, nephritis, and gout, while the data obtained in renal diabetes, infantile conditions, such as tetany and cyclic vomiting, in eclampsia, malignancy, cholelithiasis, pernicious anemia, disorders of the ductless glands, and various urological conditions, and have given new viewpoints regarding many diseases. These facts not only

furnish information of very great value in diagnosis and prognosis, but permit of more direct treatment.

Significance of Bacteriological Examination of the Blood.

A few general facts regarding infection, infectious processes, and the methods of studying them are necessary to a clear working knowledge on the part of both physician and laboratory.

The old classification, or grouping, of infectious diseases, such as, (I) contagious diseases, (II) miasmatic diseases, and (III) miasmatic-contagious disease has become obsolete. Since the causes of infectious diseases and the modes of their transmission have been worked out, the vagueness of this classification has become obvious.

Infection means the invasion of the body by living microorganisms which find their conditions permitting of their multiplying and causing injury to the body, thus giving rise to disease-phenomena. Similar disease-phenomena sometimes follow intoxications in which no living parasites enter the body, e. g., after the ingestion of spoiled food (botulismus); here the microorganisms have produced outside the body the poisons that, where swallowed give rise to symptoms (Barker).

The terms septicemia and pyemia should be dropped. Instead of the term septicemia, one should say general infection or bacteremia, if the primary focus cannot be found. For the term pyemia, the name metastatic infection is preferable. A distinction should be made between terminal local and general infections. Positive and negative blood cultures are usually of value only if they are interpreted by those who have had wide clinical knowledge especially in infections.

Serology.

The value of agglutination tests in clinical diagnosis of infectious diseases should not be over-estimated, nor yet under-estimated. In typhoid and paratyphoid the technic should be standardized. Agglutination tests, in bacillary dysentery, should reveal the bacillus and its type. The complement fixation test in gonorrhea is of specific value in arthritis and epididymitis, and to less extent in prostatitis, and chronic urethritis. In tuberculosis, the complement fixation test is not at all reliable. It seems to be of some definite value in glanders and echinococcus cyst.

The Wassermann reaction is the most important for practical purposes. It is present in 100 per cent of active secondary cases uninfluenced by treatment, and in 80 to 90 per cent of tertiary cases. About 70 per cent of tabetics show reaction in the blood and an

additional 20 per cent would show reaction if the spinal fluid is examined. Craig reports 82 per cent positive results in congenital lues. Yaws, recurrent fever, and a considerable proportion of cases of trypanosomiasis and leprosy give the reaction. In malaria, and in scarlet fever in the febrile stage, during anesthesia, and at post-mortem the reaction may show.

After twenty years of practice and close observation, it would appear that there is not, in general, a hearty cooperation between the physician and laboratory. In many instances this fault is due to ignorance on the one hand and false pride on the other. The true physician, irrespective of false pride or lack of knowledge, will make the great sacrifice, if need be, to alleviate the sick, to care for wounded, and to succor the dying.

It is not the object of this paper to prate upon the short-comings of the physician and the laboratory, but to encourage the best that is in them for the consummation to a common end,—the prevention and cure of disease. This can only be accomplished by the cooperation of the laity and the medical profession. To illustrate, the subject of transfusion of blood and its substitutes, with the practical problems that confront you, will be enumerated:

1. The general problem.
2. Organization.
3. Diagnosis of acute anemia following hemorrhage and indications for transfusion.
4. Substitutes for blood.
5. Technic to be adopted, including the necessary apparatus.
6. Selection of donors and supply of donors.
7. Blood reactions of the recipient following citrated transfusion.
8. Results.
9. Conclusions.

Naturally from this illustration you have made your own deductions. It is evident, for the welfare of our profession, that a real liasion must be established with the laboratory.

In the last decade the viewpoint of physicians has changed relative to the concrete clinical value of pathological anatomy, and they are now directed to functional pathological processes. They are studying the causes of the deviations from the normal conditions, endeavoring to acquire that knowledge during life that pathologists find in the bodies after death. It is highly desirable for the clinical diagnosis of diseases today, that a knowledge of functional pathology, biophysics, and biochemistry be made the basic preparation of every physician.

In conclusion, it may be mentioned that the spirit of this paper is to touch only upon the salient points referable to the title. All will agree that each of the medical specialties

requires for its mastery so much experimental work, so much technical skill, and such a wealth of detail and depth of special knowledge, that a firm grasp of more than one or two specialties exceeds the mental power of a single individual. True medicine holds no place for commercialism. Hence the necessity for well equipped laboratories operated by practical physicians who are imbued with the scientific spirit.

603 New Wright Bldg.

A TREATMENT FOR TRACHOMA.

T. O. Broody, M. D. Burlington, Okla.

Having witnessed so many failures in the treatment of Trachoma by popular local methods, as for example Knapp's roller forceps, sol. Cupric Sulphat, and the radical removal of the palpebral conjunctiva, the writer has been lead to place a good deal of dependence on the following treatment. Mix the following in the order given:

Rx

Aquae Destilat.....	dr. iv
Antimonae et Potass. Tart.....	grs xv
Ferri Sulphat (Squibb).....	grs xxx
Glycerinae.....	dr. iv
Potassae Chlorat.....	grs xx

M. Sig. Formula No. 1.

Let this stand one week before using.

Acid Benzoici.....	gr i
Acid Boracici.....	grs iii
Hydrastia Sulphat (Merrell).....	grs ii
Aquae Rosae qs ad.....	ounce i

M. Sig. Formula No. 2.

Use these formulae once a day, alternating the applications each time so that each eye gets one formula every other day; for example the left eye gets formula No. 1 today and No. 2 tomorrow, the right eye gets formula No. 2 today and No. 1 tomorrow. Use formula No. 1 first on the eye of its turn. Let the patient wear very dark smoked glasses while the eyes feel irritated.

There is one important word of warning Do not, note well, do not use Formula No. 1 when there is any sign of corneal ulcer, but use formula No. 2 until ulcer is healed. When ulcer appears healed then for a while use Formula No. 1 in the regular manner, excepting that it should be diluted to 10% of its regular strength. The danger point to watch at all times is corneal ulcer.

Attend to general condition of the patient. Hot baths are often indicated—clean out and clean up. Let the food be plain, and in general, let the patient's life be hygienic.

It is customary, in my experience, to have the patient report decided improvement in his feelings within one week. The treatment

may take three months to affect what might be called a tentative cure. Toward the last, finish the treatment with Formula No. 1 in 10% strength, in both eyes each day; followed, after an interval, with Formula No. 2, also in both eyes.

TREATMENT OF PROSTATIC ENLARGEMENT*

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Volumes have been written on the operation for prostatic hypertrophy, giving the advantages and disadvantages of both routes. The perineal prostatectomy (Young's method), which is not so popular but has its advantages in certain selected cases, and the other, the Supra-pubic, which is more generally used by urologists and surgeons throughout the world.

Of the operative treatment, I will have very little to say, as my paper will be devoted chiefly to the treatment of the pre-prostatic stage, or involvement of the prostate in men of the fourth decade and first half of the fifth: to take in a chain of symptoms which have been overlooked in men ranging from forty to fifty-five years of age. At this time of life men undergo certain mental, nervous, urinary, physical and sexual changes, the second crisis in a man's life, corresponding in a way to the nervous change experienced by women at the time of menopause.

I have had a great many patients come to me with vague and referred symptoms at this age of life, having previously visited their family physician, and even been to health resorts, springs, mountain climate, etc., seeking relief and cure for their impending nervous collapse. All of this had been to no avail because the underlying trouble had never been reached, namely, a beginning enlargement and pathological condition of the prostate with its complex and referred symptoms.

Structural Anatomy.

The prostate is a musculo-fibrous gland. The proportion varies, the glandular tissue most marked in the lateral lobes, the muscular and the fibrous tissue in the pre-urethral portion.

It envelops the neck of the bladder, the base or superior surface in contact with the base of the bladder, being attached to its muscular coat, and the posterior superior portion in intimate relationship to the seminal vesicles which enter the prostate in the upper portion of the posterior surface and pass down-

ward and forward in the fibrous canal which ends at the verumontanum.

Relationship.

Anteriorly, it is covered by the prostate muscle and lies about one inch behind the symphysis pubis from which it is separated by a plexus of viens (Plexus Santorina).

Posteriorly it rests directly on the anterior wall of the rectum, being separated only by loose cellular tissue and its fibrous sheath. The posterior superior portion is directly and intimately connected with the seminal vesicles and ampulla of the vas and by fascia, structure and nerves to the base of the bladder and terminal portion of the ureters. Hence the numerous reflex symptoms.

The apex is directed downward and in contact with the deep layer of the triangular ligament.

Internally, the prostate is tunnelled by the prostatic urethra which is much nearer the anterior than the posterior part of the gland. The floor of the prostatic urethra contains a number of orifices and ducts, in which on account of their location, much pathology is frequently encountered.

Structure.

The prostate contains about fifty glands of the tubular variety, the ducts of which unite to form about twenty larger ducts, which open into the prostatic urethra on the sides of the verumontanum.

Blood Supply.

The arteries for the prostate are derived from the inferior vesicle, middle hemorrhoidal and internal pudic. They are small and of no special significance. The veins are very numerous and important. They form a plexus which lies chiefly on the anterior and lateral aspect of the prostate between the fibrous sheath and the true capsule. They communicate with the veins of the urethra, the bladder and the hemorrhoidal veins. Congestion of these veins will give rise to dysuria and retention of urine.

Nerve Supply.

The nerve supply of the prostate is important, because the condition of this organ exerts a powerful influence on other structures and their functions, particularly of the sexual system. It is not unusual for an infection of the prostate to exert a more powerful influence on the mental and general nervous condition of the individual than an infection of like grade in some other organ. The nerves of the prostate are chiefly sympathetic fibres originating from the inferior hypogastric plexus. Timofeev has shown that the prostate contains a most elaborate system of nerve-

*Read before the Section on Dermatology, Urology and Radiography. McAlester, Okla., May 17, 18 and 19, 1922.

fibres and nerve endings. There is direct communication between the nerve supply of the prostate and that of the seminal vesicles. It also contains a few fibres from the anterior roots of the third and fourth sacral nerves.

Pathology.

In prostatic diseases, there are two types usually encountered.

FIRST: The atonic type which plays a smaller part in the trouble, but one with which we have to deal. In this variety there is a moderately enlarged gland, soft and compressible with baggy and dilated ducts and quantities of accumulated prostatic material, consisting of epithelium, mucus, pus, lymphocytes, red blood cells, and debris of the dilated acini. In this form also are complicated the seminal vesicles. The vesicles are baggy, atonic and easily palpable, containing a varying quantity of dammed back material. There is also at times general edema and thickening of the space between the seminal vesicles and around the ampulla of the vas.

SECOND: The other form is most frequently encountered. It is of variable size, sometimes quite large and at other times only moderate enlargement, but the pathology cannot be estimated by the size, as one of moderate size will at times give greater reflex symptoms than the large one. Examination with the finger will reveal the prostate indurated, sensitive to the touch and at times extremely painful. This enlargement and inflammation is the result of a previous inflammatory condition and is frequently due to an infection dating back a number of years. However, we do have this trouble in people who have never had gonorrhea, as it can be caused from a mixed infection which has produced a chronic low-grade inflammation, resulting in a hard, chronically inflamed gland. From this chronic inflammation the seminal vesicles have become involved to a greater or lesser degree and are usually small and contracted, if felt at all, and bound down with adhesions, frequently against the prostate. And the ampulla of the vas is also adherent. In this class one will frequently find the bladder baggy, tonicity partly destroyed and incapable of expelling all the urine. This is due either to extensive inflammation underneath, which involves jointly the prostate, seminal vesicles, and vesico-ureteral region, or the bulging portion of the middle lobe, and interfering with its expulsive function, thereby causing residual urine, frequency of urination, and general disturbance of the vesical region.

With this pathology existing and considering the involvement of the nerves supplying this region, one can readily understand the reason for the varying nervous and physical symptoms.

Symptoms.

At this time these patients are not suffering from the true prostatic neoplasm or hypertrophy. However, this hyper-plastic tissue begins its development, according to Losely and others, as early as the third decade, but this will not cause the urinary and nervous manifestations as described until the patient is beyond the age of 50, unless malignancy has intervened. Their history usually reveals a train of symptoms as follows:—Headache, vertigo, moderate loss of weight and strength, rheumatoid pains in the lumbar and sacro-iliac region, pains extending down the sciatic nerve, neuritis and paresthesia, variable appetite, digestive disturbances, stasis, bad teeth, bad breath, bad taste, coated tongue, diseased gums, and tonsils, beginning eye trouble, disturbances of the cardio-vascular system, sleeplessness, inability to concentrate the mind as formerly, mental lassitude and prominent urinary symptoms, such as frequency, inability to hold urine any great length of time during day, night frequency, two or three times, and with a beginning residual urine ranging from one dram to two ounces. While this amount of residual urine is small, yet it is enough to up-set the patient's general physical and nervous system. These symptoms alone are enough to produce great nervous and mental changes, but there are others and by closely questioning the patient, you will also find that he is suffering from partial to complete impotency. This added to his mental anxiety, loss of sleep and lack of relief which he has sought, but not found, will often cause him to do himself bodily harm.

Of course, all of these symptoms are not outstanding in each case, but the patient is suffering from a number of these, and is in need of judicious treatment.

Usually and unfortunately these cases are treated very lightly by the physician who is being consulted, merely telling the patient that he is overworked and unduly nervous and that the symptoms will soon subside, advising rest and perhaps giving a nerve tonic without appreciating the real underlying pathology.

Diagnosis.

We should be very thorough in making and collecting a correct history. Often times this is difficult, as the patient is inclined to hide some act of indiscretion earlier in life, so one will have to question him very closely regarding his past life as well as to various infectious diseases. Then a very thorough physical examination should be made. This should begin by examination of the entire body, especially of the genital region. Next the patient should be requested to void two

specimens of urine, noting the character of each; a specimen to be sent to the laboratory for microscopic and chemical examination. After patient has thoroughly emptied the bladder, introduce a soft rubber catheter into the bladder to determine the amount of residual urine. Usually there is a small amount, varying from one dram to an ounce or more. (Patient is usually unaware of this retention.) Next, a digital examination is made per rectum, noting condition of the sphincter-ani and the size of the prostate and vesicles. Then a sound, size 24 is introduced to determine if there is an obstruction, stricture, or general tightness in the canal. Following this, a cysto-urethrosopic examination is done. This should be applied in every case, as it reveals the condition of the bladder and the prostatic portion of the urethra, the area where so much pathology exists. A great many times here is the seat and cause of a great deal of trouble such as ulceration, erosions, enlargement, small papillomas and thickening and enlargement of the verumontanum. At other times we will find this canal in anemic condition and often times the veru is atrophic. Another thing is the character of pain experienced during the examination, whether it is hyper- or hyp-sensitive. Very frequently from the anesthesia in this area, we are able to make a diagnosis of a spinal lesion.

Treatment.

All focal infection must be treated and removed if accessible, such as infected gums, teeth, tonsils, piles, fistula and fissures. Constipated bowel must be treated by free catharsis, tonics given for the general circulatory system, dietary, hygienic measures applied. Wassermann must be made regardless of history and patient treated accordingly.

In any event, I find potassium iodide in gradually increasing doses over a long period of time to be of benefit regardless of lues. Locally, massage over seminal vesicle region and prostate for five minutes, twice a week, large size sound or Coleman dilator to remain in post urethra for ten minutes followed by installation of 2% protargol or 1-2 of 1% silver nitrate, this every five days; also the cautey spark around the region of verumontanum.

This routine should be kept up for about three months and patient be given a period of rest with instructions to return in four to six months for a similar treatment but of shorter duration. Under this treatment together with general encouragement, the patient can be tided over this crisis and regain his normal physical stability.

The above treatment if given with the hope of giving relief for the pre-operative cases and especially those under fifty-five years of age.

From a series of several hundred cases observed and treated by the writer in the last ten years, a few case histories are given as follows:

Case History, 12-19-16. W. K. B. White, age 52, occupation, oil operator. Married, wife living, four children, all living and in good health. Family history negative. With the exception of G. C. 25 years ago patient claims to have been in excellent health.

Present Trouble. For about a year has had some rheumatic pains in lumbar region which were noticed most prominently upon arising in the morning. Headaches rather frequent—bad taste—unable to smoke with satisfaction, having been an excessive smoker all his life. Indigestion, gas on stomach and a tendency to constipation. Mental attitude hardly up to normal, so he claims. Urination rather frequent, arising two to three times at night; some difficulty in starting the stream. After questioning him rather closely he admitted that he was suffering from a partial impotency. This had been worrying him and he had taken various treatments secretly for this. His visit to me was due to a fancied kidney trouble.

Diagnosis. A number of bad teeth, pyorrhea, coated tongue, blood pressure 152 over 90, heart practically negative, gas in bowels, stiffness in the lumbar region, external genital region negative. First and second urine clear—residual urine, ounces two, patient unaware of this. Prostate rather large; painful to touch symmetrical in outline, compressible and considerable quantity of prostatic material expressed from massaging; vesicles practically negative. Cysto-urethrosopic shows bladder in fair condition. Apex of trigonum bulging. Prostatic urethral mucosa thickened throughout, showing areas of elevations closing the prostatic ducts. Considerable pain encountered and some bleeding from the manipulation.

Patient treated once a week for three months as he was an out of town patient, along the lines described under treatment with the result that prostate was reduced to half its size, residuum diminished to only a few drops and the patient regained his physical and mental ability.

He has called on me at different times for treatment of short duration. At the present time is active and healthy in all his senses.

Case History, 12-6-20. E. G. D. White, age 43, married, three children in good health, negative family history. No history of ever having had venereal diseases. LaGrippe sixteen years ago followed by occasional bladder disturbances.

Present trouble. Rheumatoid pains over body at times for about four years, aching in character and most pronounced in lumbar

region, stiffness of muscles, numbness of fingers, occasional headaches but no involvement of bones or joints. Urinary symptoms more noticeable for the last year, consisting of frequency, hesitancy, and at times a slight pain at termination.

Examination. Bad teeth, throat congested, tonsils fair size but no trouble from same—upper extremities negative, varicocele left side moderate size. Urine cloudy, low specific gravity, slightly acid. Residual urine, ounces one; prostate very large, compressible and tender, large quantities of material stained with blood, expressed by massage. Stains show extra cell diplococci and streptococci. Kidney and function negative. Bladder slightly trabeculated, marked bulging at apex of trigone. Prostatic urethra thickened and in folds and of a low grade inflammation, very painful and considerable blood followed the examination. This condition due to a mixed infection, non-specific.

Treatment about same as outlined above. Patient now free from pain, prostate reduced in size and character of secretion improved. Bladder and prostate in fair condition and no residual urine. Patient discharged with instructions to report at times as these cases cannot be cured at one course of treatment but must be kept under observation, and treated as condition arises.

Case History, 3-16-20. W. E. M. White, age 49, married, no children, wife never pregnant. Family history negative. G. C. 23 years ago and was under treatment about two years. Health otherwise excellent.

Present Trouble. Principal complaint is difficult and frequent urination, with pain over bladder at times, radiating perineal region, loins and lumbar region. Extremely nervous, irritable, forgetful, unable to concentrate on business, sleeplessness, appetite variable, coated tongue and constipation.

Patient under impression that he had beginning Bright's Disease and his wife thought he was on verge of nervous breakdown due to business conditions.

Examination. Upper extremities negative, external genitals negative. First urine cloudy, few shreds. Second and third slightly cloudy. Small catheter introduced locating dram of residual urine. Prostate very large and tender, very little material showing after massage. Stricture located at bulbo-membranous urethra size 20.

Treatment. Gradual dilatation of stricture, massage of prostate and deep instillation. This every four to six days over a period of about four months at which time patient's urethra would admit sound size 30 without bleeding or special discomfort. Prostate re-

duced in size and general symptoms of patient back to normal.

This patient had been advised to have a prostatectomy which, of course, was unnecessary, as course of treatment demonstrated.

Cas' History, 10-15-20. J. L. White, age 46, bachelor. Family history negative. G. C. and syphilis 20 years ago, the former cured in about four months, the latter treated the old way intensively. While patient thought himself cured of syphilis, yet never felt safe to marry and lived usual life of a bachelor.

Present Trouble. Sexual neuresthenia, consisting of anemia, poor blood supply, claims parts to be cold. Disturbance in urinary act, vague pains over body and general mental depression.

Examination. Upper extremities negative, moderate varicocele left side with a long scrotum. Very large and hard prostate, no pain nor fluid expressed by massage. Vesicles negative; residual urine varies from one-half to one ounce but no discomfort from same. Cysto-urethroscope introduced without pain. Bladder capacity ten ounces, general condition fair. Each kidney and its function normal. Prostatic urethra much thickening throughout but no bleeding or pain from examination.

Diagnosis. Syphilitic infiltration of the prostate causing the large hard and painless gland. The marked anesthesia in the prostatic urethra would lead us to suspect spinal syphilis even though we might have had a negative history.

Treatment. Anti-syphilitic treatment instituted, local massage, sounds as described, followed by operation for varicocele and partial ablation of scrotum with the following results; general improvement of patient's mentality, prostate softened and compressible, general tone much improved in the vesico-prostatic region. Prostatectomy not indicated.

Indication for Removal of Prostate

The indication for the removal of the gland is not based upon the size but upon the amount of obstruction which is produced, with the resultant damage to the upper urinary tract.

The prostate may become either the seat of hypertrophy or atrophy; that is, in some patients we find a small sclerosed and fibrotic prostate which can give equally as much trouble as the adenomatous or hypertrophic gland.

Preparation for Prostatectomy.

Patient is given a thorough general examination upon entering the hospital, bladder visualized, (this I consider very necessary) noting the character of the bladder, diverticuli, calculi and any other abnormal existing condition. An attempt is made to catheterize each ureter.

In the majority of cases this is impossible; but, if successful, the X-ray catheter is passed to the pelvis of the kidney. A specimen of urine from each collected for laboratory examination. Then the phenolsulphothalein test is made to determine the functional activity of the kidney. The patient is sent to the X-ray room for radiography. This should be done in every case as we frequently find complicating renal calculi.

Uretal catheterization is often impossible, but in every case we do the Thalein test using an in-dwelling catheter for two hours and ten minutes. Because of more or less inaccuracy with Thalein and the recent advances in blood chemistry, we are now testing the blood for the retention of non-protein nitrogen and urea-nitrogen. This has given more accurate results in our hands than the Thalein.

Usually in these cases the non-protein nitrogen and urea-nitrogen will be high, and the Thalein test low, showing the case to be unsafe for immediate operation.

Even though the various tests show the patient to be in the zone of operative safety, from sad experience I have entirely discontinued the one-stage operation, as it is unwise and unsafe, because these patients are always septic, with a thickened and diseased bladder, which is harboring bacteria of a vicious character, and has a tendency for a great deal of bleeding, due to the diseased and thickened mucosa. Operation at this time, through this diseased bladder, seems to liberate and throw into the circulation such large quantities of bacteria and their toxins that the patient is unable to withstand the shock.

My plan at the present time is to do a supra-pubic cystotomy, using gas anesthesia. This operation is of short duration and no shock to the patient. The patient is then put on a non-protein diet, with general hygienic and supportive treatment.

At this time the urine is being drained through the supra-pubic opening, all bad teeth and complicating pus feeders having been removed. The blood chemistry is run every third or fourth day until it reaches the point of operative safety, which is N P N, 28 to 32 and U N from 12 to 15. This will take place all the way from two to four weeks before the patient is a safe operative risk. I use the retention test in preference to the Thalein test as the latter is inaccurate on account of the leakage through the cystotomy wound and I have been very much pleased with the results of the former.

As soon as the blood chemistry shows the patient to be in the operative zone, gas anesthesia is given and the supra-pubic wound is stretched sufficiently to admit two fingers in

the bladder, counter pressure is made in the rectum and the prostate is removed through the previous incision. A halfinch drainage tube is left in the bladder. After being returned to room the patient is given a proctoclysis, 4% solution of sodium bicarbonate, one and one half pints every four hours for the first twenty-four hours. This is followed by general supportive after treatment. Patients of this type usually make an uneventful recovery.

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"ETIOLOGY, DIAGNOSIS AND TREATMENT OF TRICHOPHYTOSIS."*

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The subject of this paper was selected chiefly for two reasons; first, because trichophytosis is a disease so frequently encountered in this climate; and, second, because its true nature is so frequently un-recognized.

To treat the subject of trichophytosis in a complete and exhaustive manner would require a considerable amount of time, hence the limiting of this paper to etiology, diagnosis and treatment, since it will be necessary to discuss some of the symptoms in connection with differential diagnosis.

It is the writer's desire only to direct attention to a few of the more important features of this disease and if his efforts serve even to a limited degree in bringing about a more general recognition of the prevalence of ringworm, enough will have been accomplished to amply repay him.

Etiology and treatment will be considered as a whole, while for convenience diagnosis will be considered in connection with the different varieties.

Ringworm is produced by a vegetable fungus of which there are two distinct and unrelated forms; microsporons, or small spore fungi, and trichophyton, or large spore fungi. The trichophyton are divided into two main varieties, megalosporon endothrix and megalosporon ectothrix, the former invading the shaft of the hair and the latter without and upon the hair shaft.

The megalosporon endothrix is further subdivided into varieties, according to their resistance to potassium hydrate, the resistant and fragile.

The microsporons are differentiated from the megalosporons more by their arrangement than by the size of their spores since some of the former have larger spores than the latter.

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Sabourand's classification from a cultural standpoint, while much more complicated, has many points in its favor, in that they are classified more definitely in relation to the areas of invasion, type of lesion produced and pathology.

He divides the microsporons into two groups, one of human origin and one of animal origin, each group containing a number of varieties of which only one of each group is of enough importance to justify mention here, the microsporon audouini of human origin and microsporon lanosum of animal origin. The principal differentiation between the two groups is that those of animal origin produce a lesion in man more inflammatory in character.

The trichophytos are divided into two main groups, the ectothrix and endothrix, which are further subdivided into a number of varieties for a further consideration of which any good text on dermatology is recommended.

Climatic conditions exercise a marked influence on the prevalence of ringworm and it is more common in warm moist climates as well as among those engaged in occupations where much moisture is present. Geographically, there is undoubtedly an influence, especially as regards prognosis and for a long time there was a heated discussion among dermatologists regarding the resistance to treatment by tinea tonsurans in the New England states and east over that in the Mississippi Valley and there is actually a much greater resistance in the eastern states. Children are much more susceptible than adults, especially to Tinea Tonsurans and certain types of Trichophytosis corporis. Athletes wearing jock straps and men riding horseback are more susceptible to attack by the epidermophyton inguinale.

In this latitude ring worm is quite common in all its forms and should always be thought of in connection with a circumscribed skin lesion. Diagnosis is never absolutely certain without a demonstration of the fungus under the microscope. The well defined lesion of a typical ringworm is not difficult to recognize but the majority of these infections when seen first by the physician have been treated and are no longer typical in which case they do tax the diagnostic powers considerably.

Trichophytosis Capitis has to be differentiated from Alopecia Arcata. In the latter the patches are smooth, the hair falls en masse and there are no inflammatory symptoms, while in the former there is the raised inflammatory border, scaly or branny surface and hair stumps present. The silvery scales, leaving bleeding points on removal and normal hair in areas involved serve to differentiate ringworm from psoriasis of the scalp. The

condition usually termed squamous eczema of the scalp is not so sharply margined and the scales are different in character and color and the hairs are more firmly fixed in their follicles. The history of contagion usually obtainable in ringworm is absent in other conditions of the scalp resembling it and in all doubtful cases the microscope will settle the question. Favus may be recognized by its odor of mice and more general involvement as well as by the scope.

The type of ringworm invading the scalp is produced usually by the microsporon audouini, but sometimes by the trichophyton endothrix.

Trichophytosis Barbae differs from Coccogenous sycosis, with which disease it is more frequently confused, in that it presents nodules and deeper penetration of the skin while sycosis is superficial, more evenly and generally distributed and the skin between the hair follicles is red and inflamed. There is more pain and tenderness in the pyogenic infection. Syphilis of the bearded region is usually accompanied by lesions elsewhere and the crusted areas reveal ulcers upon removal of the crusts. The Wassermann will aid in differentiation here. Dermatitis of the bearded areas results generally from nasal or other irritating discharges and these may be recognized by their location.

The diagnosis of trichophytosis corporis of certain varieties is at times very difficult and it is not at all uncommon to mistake it for other dermatoses. Tinea Imbrica in addition to being a rare disease in this locality may be differentiated from Ringworm by its lack of inflammatory symptoms, large adherent scales and peculiar concentric rings.

Chromophytosis on superficial examination may resemble choasma but the latter does not scale and often involves the face while the former very seldom does. Macular syphilis may have the color but when it has reached a stage that it might be confused with Tinea Versicolor it has invaded the hands, feet, mucous membranes and other areas not affected by this type of fungus. Tinea Versicolor is very frequently attributed to a torpid liver by the layman and he often comes seeking relief from his "liver spots."

Ringworm of the Glabrous surfaces is to be differentiated clinically from Eczema, Psoriasis, Dermatitis Seborrheica, Syphilis Herpes Iris, Lupus Erythematosus and Pityriasis Rosae.

Eczema is more inflammatory, not sharply defined, is irregular in contour and has more induration and itching. Psoriasis presents the silvery scale peculiar to this disease and deeper involvement of the skin with bleeding points following removal of the scales.

Dermatitis Seborrhoica never forms vesicles or Pustules and the scales are more greasy and the redness usually less marked.

Syphilis differs in that in tertiary lesions resembling Ringworm there are multiform lesions, ulcers and crusts with atrophy over the healed areas in the centers of the circinate lesions.

Herpes iris has a predilection for the extremities and the Erythematous nature of the lesions shading off from the dark red centers into the normal skin is not present in Ringworm.

The atrophy of Lupus Erythematous, its chronic course and symmetrical distribution are all different from Ringworm.

Pityriasis Rosea lacks the papular border of Ringworm and the cigarette paper wrinkling salmon colored centers of the lesions are sufficient to make its diagnosis easy.

That variety of Ringworm caused by the *Epidermaphyton inguinale* is probably more often incorrectly diagnosed than any other since it is chiefly this variety that affects the hands and feet as well as the inguinal and sometimes the axillary regions. When involving the axillary or inguinal regions it may be confused with intertrigo or Dermatitis Seborrhoica, the differential points of which have been mentioned. When hands or feet are affected the resemblance to other skin diseases varies according to the type present. The first type, the acute, vesiculo-pustular is clinically almost indistinguishable from acute Vesiculo-Pustular Eczema, Dysidrosis or Pompholyx and the microscope only can be depended upon for certain diagnosis. Incidentally, Ringworm infection is so much more frequent in these regions than is generally supposed that every vesicular eruption should be strongly suspected of being Ringworm.

The second variety, chronic intertriginous attacking the toes is very likely to be mistaken for simple Intertrigo but hardly anything else.

The third variety, the Keratotic variety, may resemble very closely a palmar syphilis and the Wassermann and the microscope be required to make a diagnosis. Callosities of the palms or soles and Paronychia should always be suspected. With proper technic the microscope will always clinch a diagnosis and is the best and surest method of relieving any doubt in every suspected case of Ringworm.

The object in the treatment of Ringworm is of course the destruction or removal of the fungus from the skin and this is often a very difficult matter when dealing with scalp infection. In practically all severe cases epilation is required for a complete cure and when done by hand is a very tedious procedure since

it is necessary to remove the hair for a short distance beyond as well as from the diseased area.

For epilation the X-ray is by far the easiest and quickest method but should never be attempted except by a skilled operator and then only in very obstinate cases as there is a very real danger of producing permanent Alopecia.

In the opinion of the writer it is best to confine it to institutional practice where there is danger of a spread of the disease among children if the slower methods of treatment are employed and where there is need of speed in its control. It is scarcely justifiable to risk a permanent Alopecia from treatment when the disease will usually subside spontaneously near puberty without producing one.

Among the more popular local remedies may be mentioned one to five per cent formaldehyde, Tr. iodine, saturated solution of Sodium Hyposulphite, Acetic Acid and solutions or ointments of Salicylic and Boric acid of each one drachm to the ounce of Petrolatum or Chrysarobin, the latter carefully confined to the diseased area. Ointments are best applied by using a shaving brush with the bristles cut short. Caps of tissue paper or gauze should be worn during the existence of infection and renewed daily, the used ones being burned to avoid transmitting the infection to others.

In treating Ringworm of the non-hair surfaces there is less difficulty in accomplishing the removal of the parasite and this is best done by employing some method of removing the epidermis and with it the fungus. Of the many drugs recommended, Iodine, Sulphur, Chrysarobin, Sodium Hyposulphite and Ammoniated Mercury are popular and in most cases effective; simple scrubbing with green soap and water will sometimes suffice in mild cases.

The ultra violet ray as generated by the Quartz lamp is very effective when used to the point of producing desquamation of the epidermis and aids very much in smaller dosage in conjunction with local applications. It is particularly effective in tinea Versicolor and Crurus.

Tinea Barbae presents many of the difficulties of Ringworm of the scalp as regards treatment and here epilation is often necessary.

A fairly successful routine is to thoroughly macerate the skin for two days with olive oil then wash free of all crusts and scales with soap and water, shave cleanly and bathe with hot borated water for ten minutes at the same time opening all pustules and vesicles. Follow this by sponging with sodium hyposulphite solution allowing it to dry on the face.

Again wash with hot water and apply sulphur ointment, one or two drachms to the ounce of petrolatum. The following morning the ointment is washed off with soap and water, the sodium hyposulphite solution re-applied and after a few minutes the face is powdered with a borated powder for the day. Shaving and repetition of the treatment must be practiced at least every second evening and the sodium hyposulphite solution applied at other times. When pustulation has subsided the dusting powder should be used. The routine may be modified somewhat to meet the requirements of the individual case.

For the eczematoid Ringworm of the feet an ointment of Benzoic Acid 5% and Salicylic Acid 3% or an ointment of Chrysarobin 5% gives very good results. The ultra violet ray is also very helpful in this class of cases.

A warning in the matter of prophylaxis is not out of place as it has happened that the physician treating Ringworm has contracted it himself or transmitted it to others, therefore after treating such patients the hands should always be thoroughly washed, preferably with a weak antiseptic solution.

CLINIC REPORTS

PROCEEDINGS OF UNIVERSITY HOSPITAL CLINICAL SOCIETY

Dr. A. W. White: *Case of Hypopituitarism, Third Type.*

History. L. S., white male, age 52 years, admitted complaining of pain in a recent operative wound. This operation was performed at Dallas, Texas, in latter part of 1921. A "goat gland" was transplanted into fascia of abdominal wall. Central portion of transplanted tissue became necrotic and sloughed out before healing was complete. The pain is present in this area where sloughing occurred; it is constant in character dull and aching rather than sharp.

Two weeks ago he suffered an accident to his right leg in middle of tibia; this abrasion became infected and now is ulcerating.

In 1919 he had a human testicle transplanted into left scrotum, following this he has had erections and sexual intercourse. Since childhood he has suffered from general weakness, inability to do prolonged labor. He never had any desire for sexual intercourse nor had he ever had an erection. There had been a general absence of hair on body, especially face and extremities. Pubic hair has been transversely situated and rather scanty, while hair on head was luxuriant. There has been no

retardation in body growth, weight or bony development. There had been a lack of proportionate increase in strength. There has been a marked increase in hair growth since operation in 1919, so that now he has a fairly good growth of pale hair on upper lip and chin. Pubic hair has increased in amount and is growing up towards umbilicus so that now hairy area's make a triangular appearance.

In 1921 following the goat gland transplant he had a further increase in male characteristics. Erection and coitus, in patient's opinion, now are almost normal.

A decompression operation for increased intracranial pressure was performed on the patient by Dr. Harvey Cushing in 1917. The symptoms together with a tendency to epistaxis was relieved.

In his travels he has been present in clinics at Harvard, John Hopkins, Mayo's, Dallas, Tex., San Francisco, and Chicago.

Other than the above physical abnormalities he has enjoyed fair health with the exception of near sightedness and over production of fat out of proportion to strength.

Family history negative.

Physical Examination. Large obese male. No anemia. Mentality is clear but seems to be perverted some by physical condition. Skin is smooth and soft; there is a slight amount of silky hair on upper lip, none on chin. Head shows marked acromegalic deformities. Myopic eyes. Voice is rather high pitched with slight feminine tone. Well developed chest. Mammæ are rather well developed and prominent. No hair on chest. Heart and lungs negative. Arteries soft and elastic. Blood pressure 106-78. Abdomen, obese soft; livid scar to right of midline below umbilicus, tender to touch. No rigidity nor palpable masses. There is a tender palpable mass above external ring on left side. Hips are feminine type; fingers and toes blunt and short. Penis small; scrotum small and contains two small glands about 1cm. in length. These are soft and not tender.

Eye grounds: Negative except for myopic crescent at the disc.

Basal metabolism is reported minus 27.35.

Sugar tolerance quite high i. e. 132, 211, 163 mgms per 100 cc of blood at times, before ingestion of glucose, 45 minutes after and two hours after respectively.

Blood chemistry showed normal as follows: NPN 33.6; urea N. 15.2; Uric acid 2.8; creatinine 1.4 mgms.

Discussion.

(Abstracted)

Dr. Lea A. Riely: The X-rays of the head in this case show larger sinuses than are normal.

Absence of gonadal secretion may have caused the upset and the hyperpituitarism have followed. Experimental work with the transplantation of testicles into hens have resulted in the development of tail feathers and other male characteristics. Gland transplantation into humans has not usually been beneficial. One recent such patient is now reported to be in an asylum.

Dr. R. M. Howard: Certain conditions other than thyroid disease alter the metabolic rate. The lowered metabolic rate with increased sugar tolerance in this case marks it now as one of hypopituitarism.

Dr. A. D. Young: A pure hypopituitary condition is Frohlich's syndrome. The patient is small of stature, fat, has infantile genitalia and some feminine characteristics. This case is a mixed Frohlich's and acromegaly, followed by hypopituitarism. I remember a similar case in a boy. We fed him gland substance. Later a decompression was done in Baltimore. The symptoms were not relieved. I feel that treatment is not very successful in these cases but the cases are interesting in the light of what can happen when things go wrong.

Dr. A. W. White: *Closing.*

This patient's previous record shows numerous negative Wassermanns with one positive reported at John Hopkins in 1915. The X-ray plate of the head is negative except for a slight roughening of the posterior clinoid process. This patient presents a mixed type of ductless gland disturbance. He has the large frame, 5' 8" in height, 187 lbs weight, which size he attained by the age of 16 years. He has the broad forehead with hairline low, the broad nasal alae, the projecting lower mandible, hexagonal shaped head of the acromegalic type. For the last several years he has shown the characteristic evidences of the opposite condition, or hypopituitarism. The feminine shape and type of body, the high pitched feminine voice, the soft velvety skin are present. According to his history there was an absence of hair on the face and what little pubic hair he had was arranged transversely in the feminine type. His carbohydrate tolerance is unusually high and the basal metabolism is quite low, the essential outstanding features occurring in those cases in which there is an absence of pituitary function, so that we feel that this is a case of hypopituitarism following upon a hyperpituitarism with a marked involvement of the gonads far above the average. This patient has been always very sensitive concerning his feminine evidences and in endeavoring to detract attention he has always followed the heavier pursuits of man. He has been a cowboy, a sailor, worked in a boiler factory, and was a soldier

in the Boer War when he was wounded in the leg. The most interesting feature in this case is the very definite response to the transplantation of human testicle into the scrotum in 1919. Following this the hair increased very markedly over the lower abdomen extending upward along the midline, hair increasing on his face to the extent that it was necessary for him to shave, thus converting him in this respect from the female to the male type. He was able to have erections and intercourse, a condition existing to date.

Two very striking characteristics which with any clinical manifestations are sufficient upon which to make a diagnosis of low pituitary function are the markedly low basal metabolism with a high carbohydrate tolerance. Whether the case be of Frohlich type, the early adult type, or the type of this case, or the fourth or mixed type in which all of the endocrines are at fault, these two evidences are practically pathognomonic.

Drs. Lea Riely and L. A. Turley: *Case of Abdominal Carcinoma with Retrograde and Surface Metastases.*

Dr. Lea Rieley: J. F., 54 years, colored, farmer, single, entered hospital 2-1-22, died 2-18-22.

Chief complaint: Dyspnoea, pain in chest, persistent and productive cough worse at night, and also tumors in his abdomen.

Previous History: Pneumonia in April, 1921. Denies venereal history, never sick until April, 1921, when he had a pain in left chest; pain was constant and unaffected by respiration or cough. Stooping over made it worse and it would shoot down abdomen and into testicle (probably kidney). This would be accompanied by an acute dyspnoea.

Present Illness: Pain has all disappeared but he now has a brassy cough and difficult breathing like an obstruction in upper air passages. Cough not so productive but blood streaked at times. Noticed a small mass painful and tender in region of left kidney and extending across the abdomen towards the ilium. This mass gradually grew until easily palpable. Mass also in center of abdomen behind and above umbilicus. This was firm smooth and did not move with respiration, generally more tender after meals (1 to 1 1/2 hours). Pain would travel up towards left axilla. Pain accompanied by borborygmi, belching, and passing of flatus. Patient lost 35 lbs and much strength since April, 1921. Hoarseness has gradually increased.

General physical examination revealed: A somewhat emaciated elderly negro with marked dyspnoea evidently in advanced stage of some state of some chronic disease. Mentality

clear. Head and neck are slightly edematous with evidence of anemia and cachexia. Adenopathy which is especially noticed in a large tumor mass on right above the clavicle, extending above it well apart to lateral aspect of neck and seems to extend below under clavicle about in midline. Chest is practically immobile, especially left side, greatest expansion being in right axillary lines. There is a slight bulging of last six ribs in axillary lines on left side. Tactile fremitus markedly increased in site of greatest expansion, with a well defined line of demarcation between area of flatness and resonance. Percussion: entire left chest up to clavicle is flat, impaired resonance above clavicle. The flatness extends about 5 to 6 cm. to right of sternum—the heart being pushed in that direction. Auscultation: Over entire left chest the breath sounds are transmitted but very distant. There are no rales heard over this entire area. Tubular breathing and rales above 2nd rib and 3rd thoracic left. In right lung there is impaired resonance with rales, practically generalized, the least pathology being in the axillary region. There is an area of flatness in middle of and below right clavicle. Heart is pushed over 6 cm and to right of sternum, no definite borders determined. Tones best heard to right of sternum, loud and sharp, no murmurs, no thrills. Abdomen: Markedly distended in epigastrium, skin slightly edematous. Naval protruding when sitting up and pops out when belly is pressed. There is a large mass in epigastrium extending chiefly toward spleen and down below umbilicus. This mass is hard and smooth with no great degree of tenderness. On account of location of mass it is difficult to locate liver and spleen; left flank bulges out with the mass. Extremities: Feet and ankles are very edematous, otherwise negative.

Laboratory Findings: WBC 15,850. Polys 72%. Sputum-B. tb. never found. Feces negative.

Sugar tolerance test: 80 mgms, 134 mgms, and 149 mgms, before, 45 minute, and 2 hours after ingestion of glucose, respectively.

Gastric Contents: Mucus, positive. Blood, negative. Lactic Acid, trace. After an Ewald meal, no H Cl., but the following total acidities at successive 15 minute periods, 18, 21, 30, 39, 28, 29.38. Urine, negative. Blood chemistry negative. Microscopic Tissue Report on gland removed from the neck: Adenocarcinoma.

X-ray: Chest, Complete oblique obliteration of the left side by a dense shadow which is due probably to fluid. Heart displaced to right. Unable to distinguish any lung markings.

X-ray Stomach: Opaque meal. Very large

stomach with large tumor mass behind. Unable to show any involvement of the stomach. Six hour stomach empty Meal extending from ileocecal valve to sigmoid. Twenty-four hour meal entirely evacuated.

Dr. L. A. Turley, Norman, Oklahoma. The autopsy revealed a large tumor mass extending from near and posterior to the head of the pancreas, to and involving the left kidney; that is, the kidney was apparently embedded in and formed a part of the general mass. The habit of this tumor seemed to be to develop an encapsulated mass approximately the size of a lemon, and then on the rupture of the capsule, other similar masses would develop. As a result the general mass of the neoplasm had a lobulated appearance.

One of the earliest involvements was in the lower pole of the kidney. There were also some late involvements in the kidney. As a result of the tumor growth the kidney had atrophied to a small cystic mass about 1 1-2 X 2 1-2 X 3-4 inches.

From the original site the tumor had metastasized by the lymph stream to all of the mesenteric lymph nodes. This, however, was one of the later developments of the tumor. One of the earliest metastases was to the upper surface of the diaphragm on the left side where there developed a characteristic tumor mass. From this mass it metastasized by surface to the outside of the pericardium which as you see is covered with a great many small bush-like papilla. It also spread to the visceral pleura of the left lung, which as you see is covered with many small masses and some larger tabs of tumor tissue. It involved the mediastinal lymph nodes and then advanced to the right side and invaded the surface lymphatics of the right lung over a considerable area until they appear to be injected. The tumor also metastasized to the supraclavicular lymph nodes on the right side and involved the right posterior cervical chain. It was from this site that the specimen was taken for diagnosis of the tumor before death. The tumor late in the case invaded the peribronchial lymphatics and advanced along the bronchi.

It was at first thought that the tumor was connected and probably arose from the head of the pancreas. This was found to be not true as there was no connection with the pancreas, nor was there any involvement of the pancreas, nor was there any involvement, either primarily or secondarily, of the stomach, liver, gall bladder, nor bile nor pancreatic ducts. A study of the histology of this tumor, especially the character of the cells, would indicate that it was pancreatic in origin, therefore the only assumption we can make as to

its origin, judging from the location of the oldest processes, the character of the cells and the general structure of the tumor, leads us to the conclusion that it originated from an undeveloped anlage of an accessory pancreas.

Discussion.

(Abstracted)

Dr. LeRoy Long, Oklahoma City. My attention was recently called while visiting a clinic at Houston, Texas, to an X-ray plate in which the radiologist pointed out that in carcinoma of the lung the plate has splotches upon it as if fingers had been "dabbed" against the plate. In this case this appearance seems to be present in the lung opposite from the one chiefly involved and it is interesting to know if that lung was also involved.

Dr. Lea Riely: Closing. The supraclavicular glands enlarged are suggestive of carcinoma of intra-abdominal organs, the metastasis being by the thoracic duct. In this case the pathology is in the right supraclavicular region and I am unable to explain what produces this. The increased transmission of sounds in the 2nd and 3rd interspaces below clavicle were explained at autopsy by dense fibrous adhesion holding the lung to the surface. Pleural puncture gave thick bloody fluid under high pressure. The abdominal pathology, the sugar tolerance curve (cancer curve), the splotching of the X-ray picture of the right lung, and the enlarged supraclavicular glands made us make a diagnosis of pulmonary carcinoma secondary to abdominal carcinoma, which was confirmed on autopsy.

Dr. L. A. Turley: Closing. There are two very interesting features to this tumor. One of them is that the whole course of the spread of the growth was retrograde, in all cases going against the lymph stream rather than with it. The other point is that it is a beautiful example of surface metastasis as exemplified by the growth on the outside of the pericardium and the visceral pleura.

Dr. Wm. Taylor: Case of Pulmonary Abscess.

White girl, J. E., Age 12 years.

Previous History:

Tonsils removed Nov. 17, 1921, under ether. Post operative condition good. Was discharged Nov. 18, 1921, in good condition. Reentered hospital Dec. 9, 1921.

Chief Complaints:

1. Pain in right side of chest.
2. Slight cough.
3. Fever.
4. Chilly sensations.
5. Constipation.

Present Illness: Patient has never fully recovered since her operation. December first she suddenly discovered a severe stab-

like pain in her right side while laughing. Has been present a week now and is increasing in severity. Chest was strapped and this gave relief. Has had a non-productive cough the past week. The mother thinks the patient has had a temperature the past few days because she has had a flushed face, warm and a great craving for water. She has not a definite chill but early during the past week she had chilly sensations and her feet were cold.

Physical Examinations: Positive findings. Breath foul. Neck—some small palpable cervical glands. Chest—symmetrical; expansion equal except in lower right which is strapped with adhesive. Lungs—left negative; right limited expansion in lower part in mid-axillary line. Percussion—marked dullness in same area. Marked friction rub over same. No rales. Breath sounds distant. Heart—apparently normal in size and position. No murmurs, no thrill, no shock, no irregularity. Abdomen, negative. Reflexes negative. Temperature 103°C. Pulse 110. Respiration 26. Blood pressure 116-72.

Laboratory findings (on entrance): Urine, negative. R. B. C., 4,080,000. Hgb. 80. W. B. C. 11, 650, Polys 76. Transitional 6. S. L. 11, L. L. 7. Numerous sputum examinations, negative.

12-15-21. W.B.C.-28,000. Polys.-89.

12-18-21. W.B.C.-14,600. Polys.-76.

1-3-22. W.B.C.-10,100. Polys.-74.

1-24-22. W.B.C. -15,150, Polys.-63, Urine albumen plus.

2-2-22. W.B.C. 8,850, Polys-57, Small Lymph 30, Urine-negative.

12-14-21. Foul smelling breath after coughing. Fluoroscopic examination shows evidence of empyema or abscess.

12-15-21. Patient does not seem very sick but she is still running a temperature. Coughs considerable and has the same findings in chest as on entrance.

12-19-21. Chest needled, no fluid obtained.

12-20-21. Patient continues to cough a great deal. Breath very foul.

12-24-21. Some very foul smelling material coughed up. Breath very bad.

12-29-21. General condition improved. Cough not so marked. Odor of breath not so bad. Temperature slowly coming down.

Since then; Gradual improvement.

X-ray Reports: 12-13-21. Heart negative. Right side-Diaphragm obliterated by a dense shadow extending upward to the junction of the upper and middle lobe. This shadow appears to be a thickened pleura. No definite radiographic evidence of fluid.

1-4-22. Marked improvement in right chest since examination made Dec. 13, 21. Shadow is now extending over less than two (2) interspaces.

1-16-22. Marked decrease in size and density of shadow since Jan. 4, 1922.

1-31-22. Still a shadow on level the 4th and 5th ribs laterally. Marked improvement since last examination.

Holt makes the statement that it is impossible to distinguish between localized empyema and lung abscess, except by operation or autopsy, but taking into consideration the history of tonsillectomy and onset of symptoms about three weeks later with subsequent course it seems to be fairly certain that we are dealing with lung abscess.

Discussion.

(Abstracted)

Dr. J. F. Kuhn, Oklahoma City. These are difficult cases. I believe the treatment has been good.

Dr. Balyeat: The X-ray does not show the degree of pleural thickening said to be present in an encysted empyema as a differential point from lung abscess.

Dr. A. L. Guthrie, Oklahoma City. Although many cases of pulmonary abscess following tonsillectomy have been reported, this condition is rare considering the great number of tonsillectomies performed. In my opinion the most important preventive factor is constant aspiration of blood and secretion during the operation and the position of the patient while removing the adenoids. I believe the patient should have the head lowered and turned on her side while the adenoids are being removed. No tags of adenoids or tonsillar tissue that may have a tendency to slough and be subsequently aspirated should remain.

Dr. A. A. Will, Oklahoma City. Could antiseptic applications such as argyrol be applied to the throat previous to operation with a view to sterilizing it?

Dr. Guthrie: No tonsils should be removed during the acute stages of inflammation, and in my opinion it is not possible to sterilize the tonsillar crypts and adenoids of long standing infection by any antiseptic applications.

Dr. Wm. Taylor: *Closing.* The X-ray picture of a recent case following aspiration of a staple showed a pneumonic process surrounding the staple. My idea is that there was a pneumatic process about the infected material probably aspirated in this case and from that we could get a pleurisy. However, in this case I think we have a pulmonary abscess.

Dr. LeRoy Long, Oklahoma City. *Two Cases. Extensive Ulcer of Leg—Skin Grafts.*

Case No. 1, John W.—Hospital No. 14410. The first patient this evening is a young man 24 years of age. He was reared and has

always lived on a farm, doing the work of the average farm laborer.

This patient entered the hospital September 20th, 1921, on account of an enormous ulcer on the left lower leg, with great enlargement of the leg, accompanied by pain.

According to the history, the patient scratched a chigger bite on the leg about five years ago, breaking the skin. He kept on about his work, frequently coming in contact with dew and dirt, and from day to day he would scratch the leg when it itched. Pretty soon there was a sore, and this sore gradually grew larger and larger. Numerous irregular and abortive attempts to heal it were made. Finally, being unable to work, he was sent to the hospital.

The day he entered there was a P. M. temperature of 99.6. The next day it was 100. Since that time it has been normal practically all the time. The pulse was around normal. The urine was negative—W.B.C. 9550, neutrophils 85, eosinophiles 2, small lymph 12, large lymph 1. The Wassermann was negative.

There was a large ulcer involving the middle third of the left lower leg, the center being on anterior surface, and extending almost around the leg. It was nearly eight inches wide at widest point. It was covered with necrotic material. The edges were irregular, rough and ragged, and beyond the margins the skin was red, swollen and painful.

The patient was put to bed, fomentations of boric acid applied until the ulcer was clean, after which it was dressed with sterile vaseline on old muslin, the leg being elevated. For a time the notes of the House Officer indicate that there was considerable improvement, but after a while it began to again break down and was not very encouraging. It may be remarked that during this time the patient was permitted to be up and down, and he was often found walking about the ward. The ulcer was again covered with necrotic material, and there was some breaking down at the margins.

About a month ago it was decided to keep the patient rigidly in bed with foot and leg elevated all the time. At the same time boric fomentations were again used until the ulcer became clean, when vaseline dressings were applied. This course resulted in great reduction of the swelling of the leg and an improvement of the ulcer. Granulations developed and the pain was relieved. Three weeks ago some Ollier-Thiersch grafts were taken from the arm and, as you will see, the ulcer is now nearly covered by skin.

An interesting point in this connection is the type of ulceration. As you know, ulcera-

tion is one of the ways in which inflammation terminates in the death of the part involved. The ulceration in this case is the result, in my judgment, of an inflammatory process inaugurated by an infection following the chigger bite and the scratching, and the careless exposure. As the process continued, there was great hyperplasia of the tissues about the leg as the result of the effort on the part of the body to combat the infection. Out of this grew an interference with the venous return. So, then, we have several factors to consider in this case—an infection terminating in ulceration, the interference with venous return on account of the pressure from the exudate, and the active cell proliferation resulting in the development of new tissue—hyperplasia.

The technique of the skin grafting was that suggested by Dr. Hertzler of Kansas City, several years ago. The granulations are cut off with a sharp instrument—a razor was used in this case—dry gauze used to stop hemorrhage by pressure, grafts cut without stream of water, and thirty or forty thicknesses of gauze carefully laid together on the work table, and a little vaseline spread thinly on one side of this thick gauze layer. The edge of the spatula (a table knife makes a splendid one) is drawn over the surface back and forth so that all excess vaseline is removed. This first dressing is put on, then left for seven to ten days. When it is removed there is usually a good deal of detritus over the area, which is removed by a gentle stream of sterile water or salt solution. A good way is to squeeze water out of a sponge over the area. Let it dry for a few minutes, then dress in the same way as at first, not using quite so much gauze. After this, the dressing is usually changed every two or three days. No chemical of any kind is permitted to come in contact with the area.

Another matter of practical importance in connection with skin grafting is to keep the part immobilized while the first dressing is on, and perhaps for even a longer time. In this case, the leg was fixed in a plaster trough, and, as you will see, it is still being employed. I have had the misfortune in at least the case of one patient to see all the grafts destroyed when this precaution of immobilization was overlooked.

This ulcer is apparently healing in a satisfactory way, but the leg is far from normal. The large area covered by grafts will be for a long time—perhaps always—a locus minoris resistentiae, and the patient must be instructed to protect the leg from injury.

I submit as points of interest in this case:

1. The origin of the ulcer.

2. The enormous enlargement of the leg due to an extensive hyperplasia dependent upon a long-standing, attenuated infectious process.

3. The value of elevation carried out systematically for a long time.

4. The importance of protecting the ulcerated area by the use of bland dressings so that the integrity of new tissue will not be jeopardized.

5. The technique of grafting.

6. The importance of immobilization so that the grafts may not be disturbed.

7. Definite education of patient with reference to after care.

Case 2, Nathan M—Hospital No. 14865.
Acute Pyogenic Osteomyelitis of the Os Innominatum.

This patient is a schoolboy 17 years of age, from Pawnee, Okla. He entered the hospital November 6, 1921, after an acute illness of five weeks.

The chief complaint upon entrance was severe pain about and above the right hip, and extreme weakness. Emaciation was most pronounced, it being estimated that he had lost about one-third of his average weight of 150 pounds during the five weeks' illness.

The boy was entirely well until a few days before he had to go to bed. In fact, he was rather rugged, he playing left guard on a football team. A couple of days before acute symptoms were manifest, he says that he noticed that it was difficult for him to get away quickly on account of weakness and an uncomfortable feeling about the right hip. In a couple of days he was not able to get away from the line at all on account of pain and weakness, and when he saw a doctor it was found that he had fever. The pain became more severe, but for three or four days there was no swelling.

I wish to call attention to this important fact in the history of this patient—the presence of pain three or four days before there was swelling. It is a most important point in the differential diagnosis when acute pyogenic osteomyelitis is under consideration. It is particularly important in the usual case in which there is involvement of a long bone contiguous to a joint. In a long bone the process starts deep down in the bone on the shaft side of the epiphyseal line. It begins in the medulla as an infectious process—an infectious process that terminates in the formation of an abscess *on the inside of the bone*. During the evolution of the infection, from the time it begins to pus formation, the local changes characteristic of an inflammatory process are present, but these changes take place *on the inside of the bone*, and for that

reason there is no swelling *outside*—there is no swelling that can be demonstrated in the examination of the patient because the swelling during the developmental period of acute pyogenic osteomyelitis is *on the inside of the bone*.

Given, then, a patient in the osteomyelitis period of life—usually six to sixteen years—who becomes quickly ill with severe pain near a joint, with fever and leucocytosis, an osteomyelitis is to be strongly suspected. Indeed, it is so characteristic that the burden rests upon the doctor to bring forward *proof* that it is not osteomyelitis.

is not much complaint of pain on the part of the patient. That is an exception, and does not hold in the case of the average patient. In the average case the infection is due to the staphylococcus, and usually the toxemia not so profound as to obscure other symptoms.

In about two weeks, in the case of this boy, there was fluctuation in the swelling, which was most pronounced above the hip. It was incised by the family doctor and a large quantity of pus evacuated, and it continues to discharge.

The patient entered the hospital with a pulse of 116, temperature 100. For some



NOTE: The "moth-eaten, mottled" appearance of ilium, the involvement of both pubis and ischium and the displacement of the head of the femur on account of the destruction of the acetabulum.

In the case of this patient, the osteomyelitis is in an unusual location, but even in his case you will observe the typically characteristic relation between the development of pain and swelling. He had pain for about three days at least before any swelling was noticed, and with the pain he had fever. He says that he suffered day and night. Occasionally, in the case of a patient who has a pronounced infection, particularly streptococcus infection, the toxemia may be so pronounced that there

time the temperature ranged from normal to 102. The white blood count was 19,250. There was profound anemia, the red count being 2,100,000 with a hemoglobin of 55. A culture from the pus grew staph. aureus.

At first, the question of a malignant neoplasm of the ilium, with subsequent infection, was raised on account of the character of the X-ray findings. There was a moth-eaten, mottled appearance of the ilium, as shown in the accompanying cut, but the neoplasm was

ruled out on account of the following reasons written into the record at the time:

"In the case of this patient the following points are significant with reference to differentiation between an acute infectious process from the beginning, and a neoplasm followed by an infectious process: The acute onset, after a prodromal period of two or three days, the existence of severe pain for three days before there was swelling, the formation of an abscess, which was incised about two weeks after onset, the extremely marked disability and acute course accompanied by great emaciation, X-ray evidence of disintegration of the os innominatum, confined principally to the ilium, the absence of X-ray shadows in the soft structure about the bone, which are usually present in late neoplasm of the bone. In view of the above, it is my opinion that this is a case of acute osteomyelitis of the right os innominatum, principally of the ilium."

At the time this boy entered the hospital it was deemed best to not undertake any radical or extensive operative procedures for several reasons, among them being that there was already drainage from the opening made into the abscess several weeks before, the condition of the boy was extremely bad, and there had not been time enough for the development of new bone so that a final radical operation for the removal of sequestra could be safely undertaken. It was advised, therefore, that he should have good and sufficient nourishment, support of pelvis in order to relieve pain, steps to prevent pressure sores, drugs as necessary to relieve pain and promote sleep, no surgery at all being undertaken except the simple incision of abscess should localization of pus take place.

Carrying out the above plan, the patient has improved a great deal. He still has a little fever in the afternoon, and the leucocyte count is still above normal, which is quite common in conditions of this kind. There has been a remarkable and satisfactory increase of the red blood cells, the present count being 3,430,000.

He has had a metastatic involvement of the upper tibia on the opposite side, and this was simply opened and drained, the opening being made into the medulla. It will not be long until we will be able to remove the dead bone from the os innominatum, after which we hope for a recovery from the infectious process, but there will be great crippling of the hip joint, which, as you will see from the X-ray, is involved by an extension of the process.

Discussion.

(Abstracted)

Dr. Kuhn, Oklahoma City. The X-ray

shows the head of the femur pushed up.

Dr. Balyeat, Oklahoma City. The occurrence of this infection later in bone distant from the os innominatum would support Rosenow's tenets as to the predilection of certain organisms for certain structures.

Dr. L. Long: Closing. In conclusion I wish to call attention to a very valuable contribution by Dr. Geist of Minneapolis on osteomyelitis of the bones of the pelvis, appearing in a recent number of the Journal of the American Medical Association. He calls attention to the peculiar character of the X-ray which is fairly typical in the case of this patient—that is the "moth eaten and mottled appearance of the diseased bone." Of course, this appearance of the bone is found only after there has been great destruction. It is well known that the X-ray is perfectly useless in making an early diagnosis of osteomyelitis anywhere.

Dr. Ray M. Balyeat, Oklahoma City. *Three Cases of Bronchial Asthma.*

Mr. Chairman and Fellowmen:

About one year ago I presented a paper before this same body on Bronchial Asthma, discussing especially the three types. Since last year I have had the opportunity of treating a rather large number of cases of Bronchial Asthma and believe that the three types which I discussed last year is a practical way of classifying Asthmatics.

The first type or true asthma is practically always due to protein sensitization. This type of case is one that will give a history of going to bed perfectly well but being awakened at two or three in the morning with expiratory dyspnea. If you should listen to his lungs before he retired, there would practically be no signs. While if you should listen to them at the time of his wheezing, there would be squeaks and groans over the entire chest and expiration would be markedly prolonged.

This boy is one which belongs to this class. He is sensitive to the pollen of June grass only. He is now twelve years old. Since he was one year old he has had attacks of Asthma through the summer. During the last two years it has continued through the winter. Last Spring he was desensitized toward June grass and remained free from Asthma throughout the summer and this last winter. During this time he has gained fifteen pounds in weight. He has been able to run and play with other boys without shortness of breath. I believe if he is desensitized each summer we will prevent him from becoming a case of complicated Bronchial Asthma, which is sure to come if the summer attacks are allowed to continue.

The second type of Bronchial Asthma is this first type complicated with a Bronchitis.

This type in the beginning is the first type just mentioned, but on account of the constant wheezing, there develops a bronchial infection and usually carries some moisture in the chest all the time. They take cold easily. They go to bed with a cold feeling badly and are awakened with wheezing, usually have some temperature. Bubbling rales and wheezing can be found over the entire chest both before and after attacks.

This second boy represents this type of case. Earlier in life he gave a history similar to the first one I showed. He is very sensitive to wheat and all its products. For the past four years has made very little gain in weight. He is nine years old and weighed forty-six pounds last September, when I first saw him. Wheat has been eliminated from his diet. A vaccine was made from his sputum and a pure culture of *Streptococcus* was found. For the two years previous to last September both winter and summer he had attacks every two or three weeks. His attacks would be severe. Since that time he has had one very slight attack which was relieved with adrenalin. This boy has gained eleven pounds in weight since last September and is feeling fine, able to play with the other boys and gets along very well.

The third type of Asthma is that type which is not sensitive to any protein but purely bacterial. This type frequently begins in children following Pneumonia, Influenza, Whooping Cough, or Measles, and continues through life gradually becoming worse. They take cold very easily and suffer from both expiratory and inspiratory dyspnea. This type also frequently comes after forty years of age.

This third boy represents the third type of Asthma. He had his trouble ever since he was a small boy which followed Whooping Cough. He has been treated with an autogenous vaccine and been free from Asthma for several months.

The end result of type number one, if untreated, becomes type number two. The end result of type number two and three, if untreated, is perennial Chronic Bronchitis which will produce Emphysema and finally the frequent outcome, Myocardial degeneration.

So it is the final result that we should fight against. This means that we should keep down the wheezing. This is done by removing from the patient's diet any protein that they may be sensitive to, such as animal emanation, foods, pollens, etc.

If they are the bacterial type, treat them with autogenous vaccine. Prevent their wheezing with adrenalin hydro-chloride

1-1000. I want to emphasize the necessity of using 1-1000 solution and not the solution in ampules which is 1-3200.

While Asthma and Bronchitis cause very few deaths, yet they reduce in a great many cases the working ability of these individuals and certainly cause lots of discomfort both to patients and relatives.

Much can be done for this malady especially if taken in childhood, but it must be gone into thoroughly and treated scientifically.

Dr. E. S. Ferguson, Oklahoma City. *The Tonsils from a Clinical Standpoint.*

All tonsils do not have to be removed.

I am going to make a few rambling remarks about this subject and try to impress on you the type of tonsils that should be removed and the contra-indications in those cases that should not be removed.

First and foremost, a thorough examination in each case should be made in order that you understand the necessity of removing tonsils. Most men take some instrument and press on the tonsil, if a whitish, milky fluid comes out, they say they should be removed. I believe that you can get this cloudy substance from any tonsil and I do not think it is always pus. I do not believe this type of tonsil should always be removed.

The size of the tonsil has very little to do with the pathological condition of the organ. I have had a number of patients brought to me, telling me there is nothing wrong with their tonsils for they did not have any. If you would cause these patients to gag you would notice that the tonsils were embedded in the muscles of the throat.

The majority of men are careless in removing tonsils of tuberculous patients. Many would be in a better condition if left alone, at least they would not have the shock to stand when they were in no condition for it. I do not mean to say that no patient with tuberculosis should have his tonsils removed, but I do believe that that type of patients should have their work done under local anesthesia and only if you are sure they are a menace. But I wish to impress on you to examine them first thoroughly.

Here are some of the signs that call for removal. First the large, hypertrophied, buried tonsil; the tonsil with recurring abscess; general toxemia referable to tonsils; tumors of various kinds; where the crypts are diseased and fail to respond to treatment and continually show irritation, manifest by a redness of hyperemia about the pillars and frequently extending over the palate; where constitutional symptoms such as Rheumatism, Arthritis or Neuritis appear the tonsils are frequently the

source of infection and should be removed. Deafness or any middle ear diseases calls for careful inspection and if tonsils are unhealthy they should be removed. Any pathology which fails to respond to careful treatment whether it be infection or hypertrophy of sufficient moment to cause obstruction should call for surgical interference.

Some of the conditions of the tonsils not favoring removal. Large and inflamed tonsils occurring during the teething period in children, either at one, two, three years of age and sometimes as late as eleven and twelve years. All tonsils of tuberculous patients unless close examination proves that they must come away without delay. Those tonsils that do not give trouble other than enlargement and hypertrophy during the teething season should not be removed.

Under most circumstances hemipiliacs and persons of high blood pressure should not have tonsils removed during stage of high blood pressure, but should be put to bed and treated until in condition to have operation with safety, if possible.

Women and girls should be particularly careful not to have work done during the menstrual period. After menstruation is a much better time.

The majority of patients having active Tuberculosis of the chest would be much better off if the tonsils were not removed. Some patients are just apparently aggravated in their condition and why subject patients to the soreness and dry throat after Tonsillectomy if it is not improving their condition.

You must be careful about removing the tonsils in attacks of acute tonsillitis; it might sometimes be necessary but I cannot conceive of it, as there is always danger of developing General Sepsis.

I do not think there is any surgical procedure more abused than that for the removal of tonsils; however, this subject does not come under our present subject.

A number of throats are injured from careless technique during operation.

Also do not remove tonsils from patients, where in your judgment they should not be taken away just because they are determined to have them out and will go to someone else and have them removed anyway.

One more word on this subject, that is the type of patients who are inclined to develop toxemia during pregnancy from infected tonsils I do not think there is any period during pregnancy when a woman could not have her tonsils removed if a little care was used. I think it is a much better way of disposing of toxemia than leaving the strain on the kidneys as is the case if left as they are.

PROCEEDINGS OF OKLAHOMA CITY CLINIC, ROUND TABLE, WESLEY HOSPITAL

Dr. A. L. Blesh: *Surgery of Toxic Goitre.*

It so happens that within the last few weeks we have been doing the finishing of a series of graduated operations in several severely toxic cases of goitre. Two of these cases so beautifully illustrate the advantages of the method that I am selecting them for discussion.

The case of Mrs. F. described in a previous report to the Round Table, as a peculiarly dangerous risk because from the long duration of the disease, myocarditis with valvular incompetency was marked. She was extremely emaciated, excitable and nervous, and the heart at times became so rapid that pulsations could scarcely be counted. Both superior poles had been ligatured under local, at separate sances, the last three months before the radical was attempted.

In the mean time she had improved in every way, had gained 15 pounds in weight, was far less nervous and more optimistic. Heart lesion the same.

Under gas and oxygen with local, closely watched by Dr. Paulus, the operation of sub-total thyroidectomy was undertaken. With the enucleation of the left lobe, while several of the forceps were still in situ the patient went to the bad, from the heart. The operation was immediately discontinued, the open neck packed with sterile gauze, the patient returned to bed and stimulants given. She reacted promptly. In 24 hours the forceps were disengaged but the open wound in no other way disturbed.

In four days she was returned to the operating room, gas and oxygen again administered, the remaining lobe removed, and the incision including the musculature closed without a single untoward symptom.

Mrs. B. also reported in a preceding Round Table returned for her final. As in the preceding case both poles had been ligatured. Her general improvement had not been so marked as in the preceding case, still she was much better in every way, except that she had not gained greatly in weight. Without an untoward symptom a sub-total resection of both lobes was accomplished. Within three days her pulse had receded from 130 to 100 and at the end of a week had reached the eighties. There being no cardiac or other involvement her restoration is proceeding rapidly. Her case too was of the more purely exophthalmic type which always responds most rapidly where there are no accessory lesions of vital organs.

Remarks: As to the choice between ligature of the superior thyroid arteries themselves or

the superior poles of the glands, this is largely in my opinion a matter of the personal equation. The surgery of the ligature of the vessels is technically a little more difficult than of the poles which can always be easily located, but neither offer any unusual trouble to a trained surgeon who is familiar with the anatomy involved. On the other hand ligature of the poles unmistakably adds to the difficulty later encountered in removing the gland.

To off-set this there is no longer any doubt in my mind that there is greater improvement following polar ligature than follows the ligature of the vessels themselves. This is probably due to several factors; first, some of the gland is destroyed by the ligature thus lessening out-put. Second, arteries, veins, and nerves are included contributing far more to the gland starvation than ligature of the arteries alone will accomplish.

This first case reported would have surely died on the table had I yielded to my artistic desire to complete the operation at the one seance. No surgical achievement will justify enough surgery to kill a patient.

308 Patterson Building.

Dr. Marvin E. Stout: *Case of Tuberculosis of Left Hip Joint, Advanced.*

Mr. K.—age 13, Case No. 7934. School boy, the son of a farmer comes to the Clinic on account of pain in his left hip.

Family History: negative, and he has always been considered a hearty boy, except for the present trouble. He has had no serious sickness.

When he was about a year old he fell out the door, and the parents date the beginning of his trouble to this fall, although there was no apparent injury at the time, but several months later they noticed that there was a slight limp, and that he favored the left leg. (He was treated for a sprain and for rheumatism). He continued to limp and to complain of slight pain at times. Up to three years ago when his condition grew worse the hip became more painful and extended to the knee, and, as he expressed it, involved the entire thigh. However, he continued to walk on it and to attend school up to three weeks ago when he adopted crutches, and gave up school.

Physical Examination: Shows a fairly well nourished blond boy. Mouth and throat hygiene good, chest and heart normal, abdomen negative. The muscles about the left hip are stiff, limiting motion of the joint to a degree. There is slight tenderness to pressure, and the trochanter appears prominent, but this is due to muscular atrophy from dis-use. There is fully one inch shortening of the left leg. Aside

from the above there are no other abnormal physical findings, but the X-ray shows a complete destruction of fully two-thirds of the head and a large area of destruction of the upper surface of the acetabulum with upward displacement of the femur.

The urine is normal. There is a slight reduction in the number of red blood cells, and the hemoglobin is reduced. His temperature is 100, pulse 108.

On January 21, 1922, he was given a gas anesthetic, the leg was brought to marked abduction on the Hawley table and a plaster paris spica cast was applied to the left leg, extending from the costal cartilages to and including the foot. On the following morning he was permitted to be up on crutches, and the next day he left the hospital with instructions to take a moderate amount of rest, plenty of good nourishing food, fresh air and sunshine, but he was not prohibited from going any place he chose, or doing anything he chose.

He is to report in writing (as he lives in a distant part of the State) monthly and to return every four or five months for a new cast.

On March 5, his letter says that his pain is completely relieved, that he is going everywhere and is much improved, and again on March 28, he says that he feels as though he was completely cured.

This represents an advanced case that is easily diagnosed, but had the diagnosis been made any time during the first few years of the disease it would have saved him from being a cripple for life. However, the X-ray frequently fails to show early involvement and the diagnosis must be made from the history alone, though it is well to remember that the great majority of chronic unilateral hip joint disease is due to T. B.

On account of the advance destruction of the head and acetabulum he will get a bony union with a resulting stiff hip and shortened leg, and for this reason the leg was abducted so that the tilting of the pelvis will partially accommodate for the shortening.

Dr. D. D. Paulus: *Hiccough—Treated by Duodenal Lavage.*

Case No. , Male, Age 57.

Family History: Negative. Usual diseases of childhood with good recovery. Typhoid fever at 9. Good recovery. Lost left arm from injury 7 years ago. No other illness. Is fairly heavy eater. Smokes very moderately. Bowels constipated. Slightly increased frequency of urination. Has no vertigo or dizziness.

Present Trouble: Started one week ago following an acute "cold" without fever. Has

been persistently hiccoughing since then, without relief. Has been treated by large doses of opiates, benzyl benzoate etc., without any change in his condition. Patient has been purged rather severely with calomel, salts and oil. For past thirty-six hours has been vomiting greenish fluid—"bile stained," and is unable to keep anything on his stomach. No pain, no abdominal tenderness, no fever, no cough.

Physical Examination: Shows rather plethoric male, beyond middle age with rather florid complexion. Pupils contracted (opiates) but react to light. Teeth absent. Throat negative. Chest and heart negative. Abdomen, liver and spleen not palpable. Small umbilical hernia. No abdominal tenderness. Extremities negative, except as noted above. Tendon reflexes O K. Temperature 97.8. Pulse 80. Blood pressure 100—80.

Laboratory Findings: Urine 1038, Acid. Sugar and Indican negative. Albumen small amount. Microscopic examination negative. Wassermann negative.

No cause was found to account for hiccough except that it might have been due to toxemia following attack of "acute cold." Now has regurgitation of bile into stomach.

Patient was given duodenal lavage in usual manner with good success. A large amount of bile was obtained. Three pints of water and 1-2 glass of 33% mag. sulph. were forced into small bowel through duodenal tube. This produced several good bowel actions. Twelve hours later no return of vomiting or hiccough having recurred, patient was placed on soft diet, followed in 24 hours by general diet. One week later patient reported that no tendency to return of hiccough had recurred following the lavage. We do not believe that the slight amount of albumen in the urine had any particular significance in this case as the urine was negative on second examination.

Dr. Wm. H. Bailey: *Tumor of Buccal Surface of Cheek.*

Case No. X—Surgical service of Dr. Stout. Patient noticed a rough place on inside of lip several months ago. The tooth directly opposite it having a rather sharp edge, this place was a source of considerable annoyance to her and she would bite it frequently, causing it to bleed at times. It gradually increased in size until at the time she came to the hospital it was 6 mm. in diameter and raised 3 mm. from the mucous surface. The outer surface of the tumor was rough and irregular, similar in appearance to a common wart. The color was reddish, similar to normal mucosa.

Tumor was removed by an elliptical incision, hardened in 4% formaldehyde and frozen section made.

Microscopic examination showed a thickened epithelial layer, except at the top of the tumor where it was entirely missing. The sub-mucous tissue was abundantly supplied with blood vessels and an increased amount of fibrous tissue. The floor of the ulcerated area was composed chiefly of small round cells and fibroblasts. There was no microscopical evidence of malignancy.

This is the typical picture of the alveolar infective or irritation granuloma appearing in the mouth, more frequently at the roots of the teeth. This particular specimen, however, had considerably more fibrous tissue and less granulation tissue than is usually seen. The break in the epithelial surface is especially characteristic of these tumors. Frequently also there are numerous giant cells found scattered thruout the tissue. There is considerable tendency to recurrence unless the source of irritation is removed.

The term *epulis*, meaning "on the gum," has been used in classifying a variety of tumors springing from the alveolar processes. According to Hertzler this term should be reserved for tumors, sarcomatous in character, springing from the alveolar periosteum. They are roughly divided into fibrous and sarcomatous types, but there are many transitional forms that cannot be distinguished from fibrosarcoma. One important characteristic is that they push forward the fibrous and epithelial layers of the process which remain intact until a very late stage and often permanently.

Both types show giant cells probably of bony or myeloid origin, but they are usually more numerous in the sarcomatous variety. Both are prone to occur.

They are slow growing, whitish to red in color depending on the proportion of fibrous tissue and show little tendency towards invasion of the surrounding tissues.

The more malignant myeloid sarcomas and carcinoma of the jaw are more rapid in development, show a marked tendency towards invasion and are primarily ulcerative in character.

This tumor from Dr. Stout's case should not be called an *epulis*, even if it had occurred at the roots of the teeth.

THE SCHOOLCHILD BEFORE AND AFTER TONSIL AND ADENOID REMOVAL

After examining about 7,500 children, Littleton Davis, Roanoke, Va. (Journal A. M. A., April 22, 1922) is convinced that the incidence of heart disease in the great number of children referred for tonsil operations is very small. The cervical glands enlarge as often after as before tonsil removal. There is more complete relief from symptoms when removal is done at from 7 to 10 years of age, in the majority of cases. Early removal gives mechanical relief for a time; but the original cause of the growth, whatever it may be, is present and active until a much later period.

THE JOURNAL

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This is the official journal of the Oklahoma State Medical Association. All communications should be addressed to The Journal of the Oklahoma State Medical Association, 508 Barnes Building, Muskogee, Oklahoma. \$4.00 per year, 40c. per copy.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost, provided request for them is attached to manuscript or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive the Journal should call for immediate notification of the editor, 508 Barnes Building, Muskogee, Okla.

Local news of possible interest to the medical profession, notes on removals, changes in address, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application. It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

EDITORIAL

OUR EXHIBITORS FOR THE OKLAHOMA CITY MEETING.

The finest ever, we are sure, will be the verdict of everyone attending the meeting at Oklahoma City, so far as the commercial exhibits go to make it a success. "Clean as a Hound's Tooth" may be said of them from every standpoint, especially may this be our boast when the high class, purity and ethical standards are applied as criterions or tests of merit. Not one but what has borne the closest scrutiny of the Council on Pharmacy and Chemistry, A. M. A., not one who is not an advertising supporter of your Journal and not one but who may boast "we may have equals or peers, but no superiors." The exhibits will be grouped compactly on both sides of the grand stairway, leading from the fourth to the first floor of the capitol building. The space they will occupy is 22 by 75 feet and every foot will be full of some part of our supporters' wares.

It is hoped that every visitor will avail himself of the cordial invitation they extend to our members to visit their booths and note the advances being made in all that pertains to the doctor and his work. The firms represented will be:

Caviness Surgical Company, Oklahoma City. (Surgical instruments, physicians office equipment, tables, chairs etc.)

Oklahoma Physicians' Supply Company. (Surgical instruments, hospital supplies, etc.)

Hynson-Westcott-Dunning, —Baltimore, Maryland. Biologicals.

Muskogee Laboratory, Muskogee, Okla.

E. R. Squibbs & Sons, New York. Pharmaceuticals.

A. S. Aloe Co., St. Louis, Mo. Surgical Instruments, Physicians' Supplies.

Hertinger Bros., Kansas City, Mo. Surgical Instruments, Physicians' Supplies, Rubber Goods.

The C. V. Mosby Co., St. Louis, Mo. Medical Publications.

Riggs Optical Co., Oklahoma City, Okla. Optical Goods.

Roach Drug Co., Oklahoma City, Oklahoma. Drugs and Drug Sundries.

Swan Myers & Co., Indianapolis, Ind. Pharmaceuticals & Biologicals.

Victor X-ray Co., Oklahoma City, Oklahoma. X-ray.

J. A. Majors & Co., Publishers, New Orleans, La. Medical Publications.

W. A. Rosenthal X-ray Co., Kansas City, Mo. X-ray.

Radium Chemical Co., Pittsburgh, Pa. Radium and Radium Preparations.

Colonial Hospital Supply Co., Chicago, Illinois. Hospital Supplies.

NO SECTION REPORTERS FOR OKLAHOMA CITY MEETING.

After years of despairing effort to get accurate, satisfactory stenographic reports of discussions of papers read in the sections at our Annual Meeting, resulting apparently in no betterment whatever, we shall this year undertake an innovation, and if the members voting affirmatively to give the method a trial carry out their expressed intention to reduce their discussions to type immediately after the meeting and mail to the Journal without delay, then we have solved a most vexatious problem. Perhaps no phase of our work, unless it is that experienced in having to deny members defense when not entitled to it, has produced so much dissatisfaction and criticism as has this very matter of reports. No member has ever acknowledged to saying what the section reporters turn in as the speaker's remarks. On the contrary, if the discussor ever

does return his remarks sent to him for correction, certainly no one would recognize the thing as his baby. It comes back another story altogether.

This year each section will be provided with note paper, upon which those who discuss papers may take notes of what they wish to say, immediately amplifying the matter and at the first opportunity have it typewritten, appropriately marked so that the Editor will know to what paper it is attachable and the order in which it was spoken. This should give us the best appearing Journal, in so far as discussions go, that we have yet had.

Practically every man asked to give his opinion on the matter returned his vote, which stood 25 for sending in their own reports while 3 thought we should try the old system once more. The vote is too unanimous to disregard, we shall have no reporters.

NATIONAL HOSPITAL DAY, MAY 12.

That fitting observance of National Hospital day will be made in Oklahoma on May 12. Dr. Fred S. Clinton, Chairman, Tulsa, empowered to select his aides, at once named the following: Drs. A. L. Blesh, John Riley, LeRoy Long, Oklahoma City; T. H. Ballantine and Claude Thompson, Muskogee; McLain Rogers, Clinton; A. S. Risser, Blackwell; Walter Hardy, Ardmore and T. M. Aderhold, El Reno, and Dr. Frank H. McGregor, Mangum, Okla. The functions of this committee will be to give the matter the widest publicity, enlist the interest of every citizen possible, organize hospital staffs, nurses, teachers, in fact every person capable of intelligent co-operation. It is believed that last year, despite the brief time given for organization, more than 1,500 hospitals in the United States and Canada offered meetings of various forms and magnitude to which the public were invited to attend. Four thousand people visited the Jersey City hospital on that day and a like number visited the one at Butte, Montana. The activities covered a wide range of usefulness. An Arkansas Hospital was given linen sufficient for several months supply, a New York Tuberculosis Hospital, \$2,000 from a Hospital flower sale day. Hospital betterment was generally perceptible wherever any efforts in good faith were made toward those objects. Especially did the publicity increase entrance of pupil nurses for training. Various features of entertainment may, and should be considered by Oklahoma Hospitals, as a means of acquainting the public with the peculiar problems of hospital management and their difficulty, if not impossibility, of execution, in the absence of large funds, unless the people themselves, or

their agents, city, county and state officers in their behalf, make decent appropriations for the purpose. As a matter of plain justice, every hospital in the land should be supported just as our political institutions are, by taxation of all the people. They get the benefit in the final analysis, whether it be prince or pauper. We have had too much of this "Let John do it" business in the maintenance of hospitals and their allied matters. In this instance public meetings, receptions at hospitals, picnics, dances etc may be considered in seeking means for the work. By all means care should be taken that every school child in the state have knowledge of the work, for they are the men and women of tomorrow and we of today are too fixed in our brief stay to accomplish much more than initiate the work for the citizen of tomorrow.

"MILLIONS FOR DEFENSE, NOT ONE CENT FOR TRIBUTE."

We borrow this patriotic expression from one of our heroes of long ago. It is applicable, expresses the best in principle, one we should adhere to in practically every case of blackmailing malpractice suit brought against our members. Of course we have the occasional case of malpractice. Common sense tells us that not all of us are perfect in technique, that we are human and so prone to error. When such does occur it is the part of good sense, after proper inquiry, weighing all the surroundings, to admit the facts and make the best of circumstances. It is not a disgrace for a physician to be manly enough to admit that in him lies the possibility of doing wrong, even though the doing of the act was by inadvertance.

Recently the Tulsa County Medical Society was asked for advice. A judgment had been rendered against one of its members. The policy of the members insurance carrier was to settle such suits at that juncture, if that could be done, in their opinion, at a saving to the company. This attitude on their part is that of all such carriers, *with one exception*, that exception is in the case of our advertiser, "The Ft. Wayne Physicians Protective Association," theirs is the motto above noted. It is our belief that they practice in every case the motto, for they realize that these matters are akin to the Dragon's teeth, from one many will spring, so they fight to the last ditch, when fight is the order of the day.

In the above case the advice of the State Association's attorneys was *not to settle*, but to carry the matter to the Supreme Court, then if the lower court was sustained, all good and well, settle, even if it did call for more outlay of money than the earlier settlement proposed

demand, no good principle would be violated in following that advice.

The Tulsa Society recommended as a result of the case that our members "*take protective insurance in companies that do not compromise but fight*" to which we fervently add, Amen.

"OKLAHOMA MEDICINE AND SURGERY"—THE INFORMATION BLANK AND WHAT IT MEANT.

That doctors do have some curiosity and evince an interest in what they receive by mail is the fact regardless of opinions to the contrary. Your editor, for many years, has been slowly accumulating data which it was hoped, some day might find incorporation in a work, meritorious more or less, and which would fairly accurately depict the doings of the doctor past and present, if he ever lived in what was formerly known as "Indian Territory" or Oklahoma. This laudable ambition had impelling motives, first and foremost of which is the fact that the first citizen of the Cherokees to receive the degree "Doctor of Medicine" bore the name "Thompson" and was a grand-grand uncle of the writer. Further impetus was given the matter by the regrettable observation that regardless of his former greatness and goodness, forgetful of his hundreds of good deeds and actions to and for his fellowman, a few fleeting days only had to pass before those of our profession who passed beyond were among the things forgotten, ignored and unsung. Then came the World War, producing as it did most patriotic evidence of the self-sacrificing character of the Oklahoma doctor, whether rich or poor, physically able or otherwise, subject to the draft, which mostly he was not; to meet the demands made by a Nations sudden insistent cry for help. Again noting with regret that nowhere was there being recorded the role acted by the doctor of Oklahoma, having even to humiliate observe that his "conquering hero" return often found his former lucrative work filched from him, the usurper now possessed of an elegant six cylinder machine in lieu of his former lowly "fliver," observing this and other unbelievable changes, brought the determination to attempt as true compilation of the facts as ability and energy possessed could work into historical form. The form mailed our members and many others was the result. It was believed that that procedure would obtain with least friction the information required, and it has. Never have physicians been more prompt in making returns on their correspondence. However, a few exceptions, too many to give each a personal reply, evinced curiosity as to the object. It is not far from fact to say some evinced suspicion, sensed a "mystery," hence their query, "What do you want with the information."

We think this answers the matter, but we will add the assurance that no rogues gallery was in contemplation, as we jokingly advised one curious correspondent. We shall appreciate every fact worthy of mention as of possible bearing on the subject matter. Our State holds many good and worthy men who have really accomplished things, but new as it is, an infant comparatively speaking, we have like other pioneers neglected the niceties and ideals in struggling over difficulties and building to our present greatness. Few of us realize the many accomplishments of the whole. The professional work now being done in Oklahoma is of the very finest, but our relations are such that our own affairs prohibit that degree of acquaintance and knowledge of the other fellow, the rule in older communities. We ask the cooperation of every good physician in this work.

Editorial Notes—Personal and General

Dr. E. L. Pierce, Locust Grove, visited Kansas City Clinics in March.

Hominy Commercial Bodies have formulated plans for the erection of a hospital for their city.

Dr. Earl D. McBride, Oklahoma City, has been given charge of the Red Cross Orthopaedic work in that city.

Dr. J. W. Craig, Vinita, attended the Western Electro-Therapeutic Association, Kansas City, Mo., April 20-21

Dr. Geo. A. LaMotte, Oklahoma City is a late victim of the malpractice pest, being served with a summons lately, hearing the usual amount of gush and slush of legal parlance.

Dr. J. F. Sargent, Lexington, 1921 graduate of Oklahoma University Medical College, is a new member from Cleveland County.

Dr. E. L. Dawson, Chickasha, has been reading the riot act to those given to dumping garbage and trash about the city environs.

Drs. Horace Reed and A. D. Young, Oklahoma City, visited Osage County Medical society in March, where they read papers at the Pawhuska meeting.

Okmulgee City Hospital will have additions costing \$150,000 including an institution for the care of negro patients. A bond issue already voted upon settles the question.

Dr. LeRoy Santa, Roentgenologist to the St. Louis University School of Medicine, presented a paper at the Tulsa County Medical Society Meeting, April 24, on "Pneumoperitoneum."

Watonga's New Hospital awarded bids for building construction, exclusive of plumbing, wiring, etc., to the amount of \$13,880. The total cost is estimated to be in the neighborhood of \$20,000.

Muskogee's Soldier Hospital contract was awarded to the Manhattan Construction Company, Muskogee. The building without any accessories, such as wiring, plumbing, etc., will cost \$339,200. When completed more than \$500,00 will have been expended.

The Clinton State Hospital for tuberculous patients was opened to the public, without formality April 3rd. It is said all patients now in state institutions, but who

formerly resided in western Oklahoma and who wish such, will be transferred to the Clinton hospital soon.

Baptist Hospital and Clinics for the Annual Meeting were not received in time for inclusion in the March Journal. In addition to the names in charge of the various clinics that of Dr. R. N. Nowlin, Oklahoma City, is reported as Chairman of the Baptist Hospital Clinic.

The "Baby Book" a 96 page booklet dealing with the proper care of infant health, has just been issued by the State Department of Health, Oklahoma City. The title is "The Oklahoma Mothers Baby Book" and deals with every practical phase of baby's care. It may be had upon application by any woman.

Room 531, State Capitol Building, is "ours" for the Annual Meeting. Dr. A. R. Lewis has secured that number for our very own use, for the purpose of writing letters, etc. All 'phone messages, long distance or local calls, telegrams and mail, should bear or go to that address. The phone number is Maple 2400, Station 51.

Dr. M. K. Thompson, Muskogee, and family will go to Europe, leaving Oklahoma May 28. Dr. Thompson will attend and represent the Oklahoma State Association at the 10th International Congress of Otolaryngology, Paris, July 19-22. He will also spend considerable time at the London Royal Ophthalmic Institute and visit various European centers before his return.

Our Very Own, Medical Postmaster General, Dr. Hubert Work, acknowledges in most graceful manner, what he terms the "compliment" editorially paid him in our March issue. All of which we accept with due modesty but we reserve the right to say the last word, and that is that we did not say nearly as much as we felt like, but were limited by a meagre vocabulary.

Dr. D. W. Griffith, Superintendent of the Norman State Hospital, extends cordial invitation to all members interested in that work to visit the Norman Hospital during the meeting at Oklahoma City. His City may be easily reached by fast interurban car in 45 minutes. Dr. Griffin and his staff stand ready to show visitors over the institution, explaining its management in detail, the success of which they are justly proud.

Tulsa County Society, March 13. Dr. D. O. Smith read a paper on "The Use of Convalescent Serum in Scarlet Fever." Dr. Chas. H. Ball read a paper on "Epidermophytosis," discussors, Drs. Woods and Hendershot. Kiwanis Club communicated with the society asking that members cooperate by donations of books to the City Library. Favorable action was taken upon presentation of motion to that effect by Dr. T. W. Stallings.

Dr. Hugh Scott, Oklahoma City, for some time attached to the U. S. Public Health Service, Washington, is on his way home, according to the press, bent on prying loose the Republican nomination for Governor for himself, then the Governorship from the people, at the polls in November. Well! if we must be afflicted with that brand of a Governor, Hugh suits us to a "T," for we are quite certain that no legislature will ever feel called upon to investigate where Hugh may have gotten a hank account of a few dollars to his credit.

Hotels of Oklahoma City are The Huckins, single rooms and bath, one person, \$2.50, two persons, \$4.00.

Skirvin, single room with bath, \$2.00 for one and \$5.00 for two persons.

Kinkade, single room with bath, one person \$2.50, two, \$5.00.

Bristol, single with bath, \$2.50, two, \$4.00.

Egbert, single, \$2.00, two, \$3.00. Make your reservations now.

National Hospital Day, May 12, will be appropriately observed in Oklahoma. Dr. Fred S. Clinton, Tulsa, State Chairman in charge of the work, has named the following committee to assist him in the work. Drs. A. L. Blesh, John Riley, LeRoy Long, Oklahoma City; Claude

Thompson, H. T. Ballantine, Muskogee; McLain Rogers, Clinton; Frank H. McGregor, Mangum; A. S. Risser, Blackwell; Walter Hardy, Ardmore; T. W. Aderhold, El Reno. In several places in the State, hospitals will hold "open house" in order to acquaint the laity with their problems.

THIS WORTH INVESTIGATION—If you wish to change locations. A physician with an average practice in an Oklahoma City of 30,000 inhabitants wishes a competent man to purchase a moderate, priced home, conveniently located in a good neighborhood, take over the practice etc. Seller proposes to take the right man into partnership or agree upon a working arrangement for from six to 18 months. Not all cash is necessary to handle this proposition, but triflers and incompetents need not apply.

4-22.

Address-Extra-This Journal.

Dr. A. H. Bungardt, Cordell, also is feeling the sting of the malpractice adder. This time, it is alleged a fractured tibia was (well good paper does not deserve to be wasted in enumerating the many damages Dr. Bungardt is alleged to have brought to this plaintiff, suffice it is to say, we wonder if paper is not cheap at Cordell) just maltreated in every manner. Well, we will meet the enemy at Philippi; and while there is hardly a doubt that we, too, may exclaim with Caesar, "Veni, Vidi, Vici," that will not recompense for the injustice left trailing after in the form of lost time and money, to men whose time could not be wasted in a meaner manner.

The Medical Protective Company, Ft. Wayne, Ind. did itself proud on April 2. The Ft. Wayne *News-Sentinel* carries a double page photogravure of cuts, illustrative of the company's enterprise and great scope of work. A "distinctive place in Ft. Wayne enterprise" is the description that publication gives the company. Of pertinent interest to the Oklahoma physician, provided he is a holder of the company's protective policy, are the cuts showing the law library in the company building. "Every claim and suit ever filed in a court of record having relation to the company's business is on hand for ready reference." This is the only company in the world specializing in malpractice suits.

Dates for the Oklahoma State Meeting have been changed from May 16, 17 and 18, to May 9, 10 and 11. It will be recalled that on their own motion the Oklahoma meeting was set for the week following our own, in order to avoid conflict. It has since that time been learned that there are three other conventions to be held at the place of their meeting during the same week, which made the change necessary. It was with great reluctance that the officials of the Oklahoma State Association adopted a date that would conflict with our meeting. While we likewise regret the necessity of the change, we realize that it could not be avoided. Members of the State Medical Association of Texas are cordially invited to attend the Oklahoma meeting, which will be held in Oklahoma City, May 9-11.—*Texas State Journal*.

One Luhn, Oklahoma City, finely grounded in medical municipal, hospital, and civic lore, surely an erudite without compare, if his propositions are to be given serious consideration, proposes that Dr. J. T. Martin give all his time to the city's public health affairs. One Luhn seriously inquires, "What physician is there with a private practice, on part time health work, who will see his practice suffer?" The very idea, the ideals and knowledge of altruism on the part of One Luhn are refreshing. For his information, the *rari avis* of which he doubts existence may be found all around him, in Dr. Martin himself, in scores of municipalities, in fact that rare individual he worships not of may be found all over the world, even if his existence is met with questioning and scoffing on the part of credulous Luhn.

Creag County Medical Society will hold one of its "feature" meetings May 2. It will be held in the Assembly Hall, Eastern Oklahoma Hospital, where Dr. F. M. Adams,

Superintendent, will hold forth as host as only Adams knows how. Among the special offerings will be a clinic by Dr. A. P. Young, Oklahoma City neurologist, on paresis or some allied subject. After all the scientific thunder is delivered Dr. Adams will set forth the real attraction, a supper of the old fashioned type, which, from past experience, we know will not suffer for lack of attention.

The Meeting of April 4, had as the drawing card, Dr. Julius Frischer, Kansas City, Mo., who gave a paper on "Gonorrhea and Its Complications." He also discussed many of the newer innovations gleaned from an extensive trip to European centers, including Berlin, Vienna etc. Dr. Frischer told the Vinita physicians that Austrian physicians, even the very best, are now so poor, due to depreciation of values, that they have only the harest necessities of life, automobiles are unknown to them, and mostly they walk. After this meeting Mrs. Louis Baghy and Mrs. L. J. Pierce served light refreshments at the residence of Dr. Baghy.

Oklahoma County's \$50,000 Charity Fund, according to County Clerk Bodine, has dwindled to less than \$3,000, with four months of the fiscal year yet to run and \$10,000 in unpaid bills in sight. Mr. Bodine says that the poor of other counties drift into Oklahoma City only to soon become charges, in case of illness, hence the rapid disappearance of their fund. This statement is correct. All the larger cities of the State bear this brunt, both the city and county in question. The same is true of venereal disease work. In Muskogee, the venereal disease clinic cares for cases commonly without a radius of more than one hundred miles, while it is nothing uncommon to have a "drifter" walk nervily in demanding treatment, just freshly arrived after a trip on box-car rods from Kansas City or Omaha. It is also another argument as to why the State of Oklahoma should, through the Legislature, do something to relieve those municipalities of the unjust burden. The Muskogee Clinics' total appropriation is the munificent sum of \$300. There seems to be no trouble whatever for "The Gang" to get its claws into the public barrel, but, strange to say, county commissioners become purblind and punctilious sticklers for strict interpretation of the law as to disbursements for such purposes unless "The Gang" happens to be the applicant for aid.

DUKE MEMORIAL FUND CONTRIBUTORS.

The following are reported as contributors of various sums to the Duke Memorial Fund by Dr. LeRoy Long, Custodian of the Fund, Colcord Building, Oklahoma City. It is urged that all members feeling so inclined send their checks to Dr. Long. The Medical Profession of Oklahoma lost one of its most honorable members, one certainly of the highest ideals, principles and ethical standards, when Dr. Duke passed along.

A. J. Pope, Hanna; R. E. Sawyer, Durant; Woods County Medical Society, by O. E. Templin; H. P. Wilson and a few medical friends, Wynnewood; Logan County Medical Society, by J. E. Souther, Secretary; Pittsburg County Medical Society, by L. C. Kuyrkendall, Secretary; Woodward County Medical Society, by C. W. Tedrowe, Secretary; J. C. Hubbard; C. A. Thompson; S. E. Mitchell; F. B. Fite, Wm. P. Fite, F. W. Ewing, P. P. Nesbitt, Benj. H. Brown, A. L. Stocks, T. A. Hartgraves, J. I. Hollingsworth, M. K. Thompson, J. H. White, I. B. Oldham, H. C. Rogers, LeRoy Long.

The sum raised now amounts to \$166.00 and soon we shall engage a painter to begin execution of the commission looking toward a reproduction of Dr. Duke in oil, to be hung in the Capitol or some other suitable place.

ANNUAL MEETING

Committees on Behalf of Oklahoma County Medical Society.

Executive Committee, Chairman, Dr. Wm. H. Bailey, 308 Patterson Building.

Entertainment, Chairman, Dr. Edw. P. Allen, 425 Liberty Nat. Bldg.

Publicity, Chairman, Dr. H. M. Williams, 524 Liberty Nat. Bldg.

Meeting Places, Chairman, Dr. M. M. Roland, 404 Patterson Bldg.

Exhibits, Badges, Hotels, Chairman, Dr. F. H. Clark, 313 Shops Bldg.

Clinics, Executive Chairman, Dr. C. J. Fishman. 735 American Nat. Bldg.

The following are designated by the respective hospitals to represent their institutions:

University Hospital, Dr. Wann Langston, University Hospital.

Wesley Hospital, Dr. D. D. Paulus, 308 Patterson Bldg.

St. Anthony's Hospital, Dr. R. M. Howard, 502 First Nat. Bldg.

Oklahoma City hotels are always filled to capacity, so it is the part of discretion to now make your reservations. You should state clearly in your communication the date and hour of your proposed arrival in that city, exactly the character of accommodations desired, that is bath, number in party, etc., and it might be well to indicate whether or not lesser space would be acceptable in event of unusual overcrowding. *All requests should be mailed at once to either the Hotel desired, the second choice, or Dr. F. H. Clark, Chairman, 313 Shops Bldg.*

Do not impose this service upon professional friends, for in the end, in order to serve the largest number with the highest efficiency, the committees having these matters in charge must be able to calculate the probable number to be expected.

Annual Meeting—Oklahoma City Hotel Rates

"Do It Now"

Following are Hotel rates for state meeting.

Huckins Hotel: Single Room with bath (1 person) 2.50; Single Room with bath, (2 persons) 4.00; Single Room without bath (1 person) 2.00; Single room without bath (2 persons) 3.50.

This hotel is Headquarters.

Skirvin: Single Room with bath, (1 person) 3.00; Single Room with bath (2 persons) 5.00; Single Room without bath (1 person) 2.00; Single Room without bath, (2 persons) 3.00.

Kingkade Hotel: Single Room with bath (1 person) 2.50; Single Room with bath (2 persons) 4.00; Single Room without bath (1 person) 1.25; Single Room without bath, (2 persons) 2.50.

Bristol Hotel: Single Room with bath (1 person) 2.50; Single Room (2 beds) with bath (2 persons) 4.00; Single Room without bath (1 person) 1.50; Single Room (2 beds) without bath (2 persons) 2.25.

Eghert Hotel: Single Room, with bath (1 person) 2.00; Single Room with bath, (2 persons) 3.00; Single Room, without bath (1 person) 1.50; Single Room without bath, (2 persons) 2.50.

All reservations should be direct with the clerk of the hotel; in the event that proper reservations can not be made The Chairman of the Hotel Committee will be glad to assist in any way possible in securing the same.

Address such requests to Fred H. Clark, 313 Shops Bldg., Oklahoma City, Okla.

Very sincerely,
Fred H. Clark.

OKLAHOMA STATE MEDICAL ASSOCIATION THIRTIETH ANNUAL MEETING GENERAL INFORMATION

Members are requested to carefully read and note the following in order to cooperate in making this, as every indication now points that it will be, the most successful meeting of our history.

The General Meeting, all scientific sections, the exhibits, registration, in fact every activity, except the social section and hospital section will be held on the fourth floor of the capitol building. The exhibits and registration will be in the lobby on either side of the grand staircase. Members are positively expected to register and obtain badges and programs at the registration desks. Registration will probably be, as before, from cards which will be supplied the members for filling out, the cards containing the name, clearly written, as it goes to the various dailies. These cards will be compared with the membership rolls at the secretary's desk, and if the registrant is found to be in good standing, he will be promptly registered, provided with badge, program and various data of the meeting. Each member is also requested to register with the Secretary of the Chamber of Commerce and be their guest during the meeting. The Chamber will be glad to accommodate anyone with writing material and other courtesies of that character. The Telephone is Maple 2400. Station 51. The State Commissioner of Health, Dr. A. R. Lewis, at Room 531, will care for all telegrams, long distance telephone calls and mail. He has also, generously placed at the disposal of the members, his entire office staff, who will be glad to take messages, letters by dictation, etc.

GENERAL INFORMATION

All exhibits are under direction of the State Secretary. No one will be permitted to exhibit goods or pharmaceuticals not bearing the approval of the Council on Pharmacy and Chemistry, A. M. A., nor will non-advertisers of the Journal, doing competitive business with our advertisers, be permitted to exhibit their wares. The various hospitals offering clinics for the meeting request that prospective attendants secure cards of admission. Only so many may be accommodated at these clinics, therefore, it is clearly seen that such cards are almost a necessity in order to prevent overcrowding and discomfort.

ABOUT YOUR PAPER.

It is not your property, but belongs to your Association, so do not make the mistake of carrying it home with you, that only causes vexatious delay, sometimes total loss of the paper in question. Do not, we beseech you, carry your paper away, with the excuse that *you have not had time to correct it, correct it before the meeting.* It deserves your respectful consideration, and we have not time to enter into interminable correspondence over it after the meeting. Send a copy of your paper soon to the man who will discuss it. That courtesy is his due, and this year, very likely, we shall not have the sections reported, but each man discussing papers will be expected to reduce his remarks to type and mail them to the JOURNAL after the meeting.

If you think you will wish reprints of your paper, note on the front page margin that reprint quotations are desired. This is a double safeguard, however, before it is printed, you will be supplied with printers proof and with that will be quotations of reprint costs. Papers cannot be printed in the JOURNAL in the order they are read at the meeting. Please remember this, as requests for priority in that respect cannot be complied with. Papers are grouped according to seasons, the particular, predominant subject considered in certain issues, and must follow that rule.

HOUSE OF DELEGATES.

The House of Delegates will meet at 1:00 P. M. Tuesday May 9. It will after that time, meet on call of the President, as its demands indicate, except the first meeting of the day, Wednesday May 10 will be for the election of such officers as have vacancies, as is provided by the Con-

stitution and By-Laws. This meeting will be held in the morning in order to avoid conflict with the sections, which will meet in the afternoon.

The Council will hold its first meeting, 4th floor Capitol building, Tuesday morning 11:00 o'clock, after which its meetings will be on call of the President.

The Council will consider all matters of business of the Association and such other matters as are properly its function. Propositions intended for its consideration, not heretofore presented, should be reduced to the briefest written form as its time will be limited on account of the many demands it must attend to.

TIME OF MEETINGS.

Clinics: University, Wesley, St. Anthony's and Baptist hospitals will offer clinics on the mornings of *Tuesday, Wednesday and Thursday, May 9, 10 and 11th.* Those at The Baptist and St. Anthony's will begin at 8:00 A. M., those at the *University and Wesley at 9:00 A. M., continuing until noon.* Physicians proposing to attend these clinics are requested to secure cards of admission. Do not neglect this, as the clinic committees must have information as to the number, must limit attendance to a certain number, in order to avoid congestion.

SCIENTIFIC SECTION

Will each hold their initial meetings Tuesday afternoon, May 9, and after that meetings will be convened on call of the Chairmen, who will give due, advance notice as to the time.

DISCUSSION OF PAPERS

Past experience has demonstrated the well nigh impossibility of securing accurate reports of discussions. An enormous amount of correspondence for many months after the meeting, only results in getting a make-shift report of what is alleged to have been said, so, it has been determined to try the expedient used with success by other Associations similarly situated; request each discussor of papers to reduce his remarks to type immediately after the meeting, noting on each sheet the paper his manuscript applies to and mail the matter to the Journal. Heretofore all efforts tending to secure proper reports have resulted in an outrageous expense, one of which in the end proved useless, for the matter had to be returned to the discussor, who, as a rule never corrected or returned the paper for final printing, result, total loss. For the purpose above noted, note paper bearing descriptive heading will be circulated throughout each section.

REDUCED FARES

The Southwestern Passenger Association, St. Louis, has agreed to give us a rate of one and one half fare for this occasion, *provided as many as 250 physicians, purchasing tickets of the value of 67 cents or over, for members or their dependents apply to their local railway agent for a certificate receipt. This should be done very early, as your agent may require considerable time to secure the certificates. One certificate must be had for each ticket purchased. Dates of sale are May 6 and 11 inclusive, return limit, May 15, 1922.*

Important Instruction: Immediately on your arrival at Oklahoma City present your certificate to Dr. C. A. Thompson, Secretary, Capitol Building, or to Mr. Austin Murchison, who will represent him at the registration desk, for pre-validation signature. This certificate must also be validated by Mr. R. O. Hopkins, Traveling Agent, Consolidated Ticket Office (Union Ticket Office), Oklahoma City, before you may secure the half-fare reduction for the return trip.

The following roads are not parties to this arrangement, therefore physicians living along their lines need not apply to them, but they may, on reaching any other line in the territory, secure advantage of the rate upon application to the agent of the road they contact with to reach Oklahoma City; You must return, however, by the same route to secure reduction.

Ft. Smith and Western Ry; St. Louis, El Reno and Western Ry; Kansas, Oklahoma and Gulf Ry.

INFORMATION ON CLINICS

Dr. Ennis C. Wilson, 305 Shops Building, will from 10 to 12:00 daily give X-ray demonstrations in chest, kidney and bone lesion work.

THE GENERAL MEETING—OPEN TO THE PUBLIC

Fourth Floor, State Capitol Building, Tuesday

May 9, 8:00 P. M.

Dr. George A. Boyle, Enid, the President, presiding. Call to order by the President, Dr. Boyle.

Invocation, Reverend Phil C. Baird, Oklahoma City.

Address of Welcome on behalf of the Oklahoma County Medical Society by its president, Dr. E. S. Lain, Oklahoma City.

Response Dr. T. H. McCarley, McAlester.

Introduction of the president-elect, Dr. McLain Rogers, Clinton, Okla., by Dr. G. A. Boyle, President.

"The present status of the U. S. Military Reserve Force," General Roy V. Hoffman, Oklahoma City.

Address by the President, Dr. George A. Boyle, Enid.

Address, "Studies of Endocrine Adiposity," Dr. William Englebach, St. Louis, Mo.

PROGRAM, SOCIAL FEATURES, HUCKINS HOTEL

Wednesday, May 10, 1922.

Banquet Hall; 9:00 P. M.

9:00 P. M. Radiophone Concert.

9:30 P. M. Vaudeville.

10:00 P. M. Dancing; Song by Doctors Quartette; Music by Orchestra during evening; Buffer Lunch.

Dr. Edw. P. Allen, Chairman; Drs. W. K. West, Dick Lowry; F. W. DeMand, Committee.

SCIENTIFIC SECTIONS

All Sections will be opened promptly at 3:00 P. M., Tuesday afternoon, State Capitol Building, in the room allotted to them. Notice of their location may be found about the registration desk and at other conspicuous places on the fourth floor. Attendants are urged to facilitate section business by quitting the lobbies, halls, registration areas, etc and joining the section of their preference promptly on this hour.

Section Chairmen will call the papers of their section in the order of their appearance noted here below. If any one called is absent, that number will be passed, the next called, and so on until the numbers are all called, whereupon the process will be repeated.

SECTION ON SURGERY AND GYNECOLOGY.

Dr. J. M. Byrum, Chairman, Shawnee.

1. Chairman's Address—
"Gall Bladder Surgery in Obstructive Jaundice,"—
By the Chairman, Dr. J. M. Byrum, Shawnee.
2. "Cholecystectomy Without Drainage,"—Dr. F. H. McGregor, Mangum.
Discussion, both papers—Drs. MaLain Rogers, Clinton; T. M. Aderhold, El Reno; L. A. Turley, Norman.
3. "Local Anesthesia in General Surgery,"—Dr. W. P. Fite, Muskogee.
Discussions,—Drs. Fred Y. Cronk, Tulsa; P. P. Nesbitt, Muskogee.
4. "Acute and Chronic Salpingitis,"—Dr. J. L. Shuler Durant.
Discussions,—Dr. G. S. Baxter, Shawnee.
5. "Appendicitis and Appendiceal Colic,"—Dr. Ross D. Long, Oklahoma City.
6. "Early Diagnosis and Treatment of Acute Appendicitis,"—Dr. A. S. Risser, Blackwell.
Discussions, both papers,—Drs. Horace Reed, Oklahoma City; Irs B. Oldham, Muskogee; J. A. Gregoire, Drumright.
7. "Intestinal Obstructions,"—Dr. W. L. Kendall, Enid
Discussions,—Drs. P. A. Smithe, Enid; E. B. Dunlap, Lawton.
8. "Acute Osteomyelitis,"—Dr. J. A. Walker, Shawnee.
9. "Chronic Osteomyelitis,"—Dr. Ira W. Robertson, Henryetta.
Discussions, both papers,—Drs. Earl D. McBride,

Oklahoma City, W. C. Graves, McAlester; S. W. Wilson, Ardmore.

10. "Joint Drainage with Restoration of Function,"—
Dr. T. J. Lynch, Okmulgee.
Discussions,—Drs. C. C. Hoke, Tulsa; F. L. Carson, Shawnee.
11. "Surgical Treatment of Uterine Fibroids,"—Dr. A. W. Pigford, Tulsa.
Discussions—Drs. L. S. Willour, McAlester; J. S. Hartford, Oklahoma City.
12. "Empyema,"—Dr. G. W. Colvert, Miami.
Discussions—Drs. W. H. Livermore, Chickasha; W. E. Sanderson, Altus.
13. "Supra-Pubic Prostatectomy,"—Drs. McLain Rogers, and Victor M. Gore, Clinton.
Discussions—Drs. W. J. Wallace, Oklahoma City; A. A. West, Guthrie.
14. "Splenic Anemia (Banti's Disease) and Allied Dyscrasias—Indications for Splenectomy—Case Reports,"—
Dr. LeRoy Long, Oklahoma City.
Discussions,—Drs. J. H. White, Muskogee; C. J. Fishman, Oklahoma City.

SECTION ON GENERAL MEDICINE, NEUROLOGY, PATHOLOGY AND BACTERIOLOGY

Chairman, T. H. McCarley, A. B., M. D., McAlester, Okla.
Secretary, Lea A. Riely, A. M., M. D., Oklahoma City.

1. Chairman's Address, "The Cloud of Ignorance."
2. "The Relation of Surgery to Tuberculosis."—Dr. Alexius M. Forster, Colorado Springs, Colo.
Discussion opened by Dr. L. J. Moorman, Oklahoma City, Okla.
3. "Diagnosis of Disorders of the Ductless Glands. Illustrated."—Dr. Wm. Engelbach, St. Louis, Mo.
Discussion opened by Dr. A. K. West, Oklahoma City.
4. "Some Observations on Pyelitis."—Dr. L. A. Mitchell, Frederick.
Discussion opened by Dr. T. S. Chapman, McAlester.
5. "Carcinoma of the Cervix."—Dr. L. A. Turley Norman, Okla.
Discussion opened by Dr. L. S. Willour, McAlester
6. "Cathartics."—Dr. J. L. Day, Norman.
Discussion opened by Dr. H. C. Ricks, Caddo.
7. "Cholecystitis."—Dr. O. W. Rice, Alderson.
Discussion opened by Dr. F. L. Watson, McAlester.
8. "Pernicious Anaemia."—Dr. H. T. Ballantine, Muskogee.
Discussion opened by Dr. Horace T. Price, Tulsa.
9. "Differential Diagnosis of Cardiac Arrhythmias without the use of Electro-Cardiograph."—Dr. W. A. Lackey, Oklahoma City.
Discussion opened by Dr. E. P. Allen, Oklahoma City.
10. "Acute Intermittent Cardiac Decompensation."—
Dr. Ellsworth Smith, St. Louis, Mo.
Discussion opened by Dr. A. B. Chase, Oklahoma City.
11. "Status Lymphaticus."—Dr. J. M. Nieweg, Duncan.
Discussion opened by Dr. C. W. Heitzman, Muskogee.
12. "Tumor of the Spinal Cord."—Dr. A. D. Young, Oklahoma City.
Discussion opened by Dr. R. M. Howard, Oklahoma City.
13. "Some Facts Concerning Human Parasites in Oklahoma."—John E. Guberlet, Ph. D., Stillwater, Okla.
Discussion opened by Dr. Gayfree Ellison, Norman.
14. "Some Case Reports from General Practice."—Dr. E. K. Witcher, Pawhuska.
Discussion opened by Dr. C. E. Stanbro, Pawhuska.
15. "Chemical and Microscopical Diagnosis for the General Practitioner."—Dr. F. H. Gastineau, Pawnee.
Discussion opened by Dr. Wann Langston, Oklahoma City.
16. "Mitral Stenosis."—Dr. L. D. Conn, Morris, Okla.

SECTION ON PEDIATRICS AND OBSTETRICS

*Dr. Walter W. Wells, Chairman, Oklahoma City.**Dr. J. Raymond Burdick, Secretary, Tulsa.**Dr. Buford G. Hamilton, Kansas City, Mo., Invited Guest of the Section.*

Chairman's Address—"The Progress of Obstetrics."

1. "Case Report, Rat Bite with Unusual Complications and Fatal Termination in an Infant Three Months of Age,"—Dr. T. C. Sanders, Shawnee.
Discussion opened by Dr. J. H. Scott, Shawnee; Continued by Dr. H. M. Williams, Oklahoma City.
2. "Pyelitis of Pregnancy and Puerperium,"—Dr. J. A. Harchett, Oklahoma City.
Discussion Opened by Dr. H. C. Brown, El Reno, Continued by Dr. P. H. Anderson, Anadarko.
3. "Appendicitis in Children,"—Dr. M. E. Stout, Oklahoma City.
Discussion opened by Dr. Eva Wells, Oklahoma City, Continued by Dr. Leila E. Andrews, Oklahoma City.
4. "Home Management of Occipito—Posterior Position,"—Dr. C. V. Rice, Muskogee.
Discussion opened by Dr. A. C. Hirshfield, Oklahoma City, Continued by Dr. H. M. Williams, Oklahoma City.
5. "Diphtheria,"—Dr. C. W. Fisk, Kingfisher.
Discussion Opened by Dr. W. M. Taylor, Oklahoma City, Continued by Dr. Basil A. Hays, Oklahoma City.
6. "Puerperal Sepsis,"—Dr. W. A. Fowler, Oklahoma City.
Discussion opened by Dr. R. E. Looney, Oklahoma City, Continued by Dr. D. F. Stough, Geary.
7. "Congenital Clubfeet,"—Dr. Earl D. McBride, Oklahoma City.
Discussion opened by Dr. T. S. Chapman, McAlester, Continued by Dr. Winnie M. Sanger, Oklahoma City.
8. "Placenta, with Special Reference to Management of Third Stage of Labor,"—Dr. J. Winter Brown, Tulsa.
Discussion opened by C. F. D. O'Hern, Tulsa, Continued by Dr. Geo. R. Osborn, Tulsa.
9. "Tuberculosis in Children,"—Dr. Ray M. Balyeat, Oklahoma City.
Discussion opened by Dr. Julian Field, Enid, Continued by Dr. W. W. Rucks, Oklahoma City.
10. "Physical Examination, and Antepartum Care of the Pregnant Woman,"—Dr. Dick Lowry, Oklahoma City.
Discussion opened by Dr. E. P. Allen, Oklahoma City, Continued by Dr. John A. Reck, Oklahoma City.
11. "Care of Premature Infant,"—Dr. A. L. Salomon, Oklahoma City.
Discussion opened by Dr. J. Raymond Burdick, Tulsa, Continued by Dr. Lee W. Cotton, Enid.

SECTION ON GENITO-URINARY DISEASES, DERMATOLOGY AND RADIOLOGY

*Dr. M. M. Roland, Chairman, Oklahoma City**Dr. Robt. S. Love, Secretary, Oklahoma City*

1. Chairman's Address—"Advancements in Dermatology and Radiology,"—Dr. M. M. Roland, Oklahoma City.
2. "The Neglected Seminal-Vesicles"—Dr. E. G. Mark, Kansas City, Mo.
Discussion by: Dr. R. T. Edwards, Oklahoma City.
3. "Epidermophytosis,"—Dr. C. H. Ball, Tulsa.
Discussion by: Dr. J. C. Johnston, McAlester.
4. "Prostatectomy in the Old. Poor Operative Risks,"—Dr. W. J. Wallace, Oklahoma City.
Discussion by: Dr. F. E. Watterfield, Muskogee.
5. "Radiotherapy in the Treatment of Uterine Bleeding,"—Dr. S. D. Neeley, Muskogee.
Discussion by: Dr. Ennis C. Wilson, Oklahoma City.
6. "Urethritis,"—Dr. J. H. Hays, Enid.
Discussion by: Dr. C. R. Day, Oklahoma City.
7. "Bone Manifestations in Early Syphilis,"—Dr. C. B. Taylor, Oklahoma City.
Discussion by: Dr. C. L. Reeder, Tulsa.
8. "Urticaria,"—Dr. A. L. Stocks, Muskogee.

Discussion by: Dr. Chas. J. Woods, Tulsa.

9. "Tuberculosis of the Kidney,"—Dr. J. Z. Mraz, Oklahoma City.

Discussion by: Dr. T. M. Aderhold, El Reno.

10. "Discussion of Important Factors in Kidney Surgery,"—Dr. J. H. Sanford, St. Louis, Mo.

Discussion by: Dr. Rex Bolend, Oklahoma City.

SECTION ON DISEASES OF EYE, EAR, NOSE AND THROAT.

Dr. C. M. Fullenwider, Chairman, Muskogee

1. Chairman's Address.
2. Mastoiditis Roentgenologically considered, Dr. Ennis C. Wilson, Oklahoma City.
Discussion opened by Dr. M. M. Roland, Oklahoma City.
3. "Report of a Case of Congenital Double Anophthalmus,"—Dr. U. C. Boon, Chichasha.
4. "Trachoma,"—Dr. S. E. Mitchell, Muskogee.
Discussion opened by Dr. A. W. Roth, Tulsa.
5. "Treatment of Wounds of the Eyeball By Use of the Conjunctival Flap,"—Dr. O. I. Green, Bartlesville.
Discussion opened by Dr. T. W. Stallings, Tulsa.
6. "Syphilis of the Internal Ear,"—Dr. W. T. Salmon, Oklahoma City.
Discussion opened by Dr. L. M. Westfall, Oklahoma City.
7. "Brain Abscess of Rhinologic and Otitic Origin,"—Dr. A. L. Guthrie, Oklahoma City.
Discussion opened by Dr. Edward F. Davis, Oklahoma City.
8. "Headaches of a Nasal Origin,"—Dr. Edward A. Abernathy, Altus.
Discussion opened by Dr. Edward F. Davis, Oklahoma City.
9. "Spheno-Palatine Headaches,"—Dr. James C. Braswell, Tulsa.
Discussion opened by Dr. H. Coulter Todd, Oklahoma City.
10. "A Case of Alveolar Sarcoma Involving Antrum and Orbit,"—Dr. Howard S. Browne, Ponca City.
Discussion opened by Dr. E. S. Ferguson, Oklahoma City.
11. Paper, subject to be announced, Dr. D. D. McHenry, Oklahoma City.

HOSPITAL SECTION

Dr. Fred S. Clinton, Chairman for Oklahoma, Tulsa.

Wednesday, May 10, 1922. 7:30 P. M.

Auditorium St. Lukes Church

Meeting Place

Music

Invocation

Address by Chairman, Dr. Fred S. Clinton

Music

Illustrated lecture.....) Dr. Paul B. Magnuson, Chicago, Ill.
"Prevention of Deformities vs the Cure of Deformities")

Adjournment to Hucksins Hotel for social program.

CLINICS

ST. ANTHONY'S HOSPITAL

*Dr. R. M. Howard, Chairman.*Number of Visitors Designated by Figures.
Tuesday May 9th.

Hours

8 to 10.	Plastic Surgery—Dr. von Wedel.	25
	Internal Medicine—Dr. Roddy.	25
	Eye, Ear, Nose and Throat—Dr. Westfall.	15
10 to 12.	Orthopedic Surgery—Dr. West.	15
	Internal Medicine—Dr. Fishman.	40
	Eye, Ear, Nose and Throat—Dr. Early.	15
	Obstetrics—Dr. Allen or Dr. Eskridge.	15
	Wednesday May 10th.	
8 to 10.	Orthopedic Surgery—Dr. Cunningham.	15
	Genito-Urinary Disease—Dr. Taylor.	15
	Internal Medicine—Dr. Moorman.	40

(Continued on page 20, adv. section)

The UHs Clinics Overland Park, Kansas. For Nervous & Mental Cases.



The Lobby

The surroundings breathe an atmosphere of peace and quiet, so tranquil that the mind becomes as clear as a limpid pool deep in the unsullied forest.



(Continued from page 126)

- 10 to 12. General Surgery—Dr. Reed or Dr. Starry. 25
 Internal Medicine—Dr. Balyeat. 40
 Eye, Ear, Nose and Throat—Dr. Ferguson. 15
 Obstetrics—Dr. Looney. 15
 Thursday May 11th.
 8 to 10. General Surgery—Dr. Smith or Dr. Murdock. 25
 Eye, Ear, Nose and Throat—Dr. Messenbaugh. 15
 Pediatrics—Dr. Andrews. 40
 Orthopedic Surgery—Dr. McBride. 15
 Obstetrics—Dr. McCabe. 15

UNIVERSITY HOSPITAL

Dr. Wan Langston, Chairman.

Number of Visitors Designated by Figures.

- SURGERY. Tuesday: May 9.
 9-10:30 Gen. Surg. Clinic—Dr. R. M. Howard. 15
 9:30-11 G. U. Clinic—Dr. W. J. Wallace. 15
 10:30-12 Orthopedic Surg. Clinic—Dr. S. R. Cunningham. 15

Wednesday: May 10.

- 9-10:30 Gen. Surg. Clinic—Drs. Long & Clymer. 15
 9-10:30 Gyn. Clinic with Rapid Tissue Diagnosis—
 Dr. J. S. Hartford & Prof. L. A. Turley.
 10:30-12 Rectal Clinic—Dr. A. A. Will. 15

Thursday: May 11.

- 9-10:30 Gen. Surg. Clinic—Dr. Jno. F. Kuhn. 15
 10:30-12 Eye Clinic—Dr. Edward F. Davis. 15
 10:30-12 Ear, Nose & Throat Clinic—Dr. A. L. Guthrie 15
 Demonstrations of Gas Oxygen, Gas Oxygen Ether
 sequence and Ether anaesthesia each day in connection
 with surgical clinics.—Dr. Floyd Bolend.

MEDICINE & OBSTETRICS. Tuesday: May 9.

- 9-10 Urological Clinic—Dr. Rex Bolend. 15
 10-11 Gastro-Enterological—X-ray Clinic—Drs. A. W.
 White and John L. Heatley. 15
 11-12 Dermatological Clinic—Dr. E. S. Lakin. 35

Wednesday: May 10.

- 9-10 Cardiac Clinic with Electro-cardiograph Demon-
 stration—Dr. A. B. Chase. 35
 10-11 Obstetric Clinic—Dr. W. A. Fowler. 15
 10-11 Diabetic Clinic with Demonstrations by Bio-
 Bio-Chemist and Dietitian—Dr. Lea A. Riely. 75
 11-12 Pediatrics—Neuropsychiatry—Clinic—Drs. A.
 D. Young and W. M. Taylor. 35

Thursday: May 11.

- 9-10 Medical-Gastric Clinic—Dr. J. T. Martin. 35
 10-11 Medical—Thyroid Clinic with Basal Metabolism
 Demonstration—Dr. C. J. Fishman. 75
 11-12 Obstetric Clinic—Dr. Dick Lowry. 18
 Laboratory Demonstrations each day.

CLINICS ARRANGED FOR WESLEY HOSPITAL

Dr. D. D. Paulus, Chairman.

Fifteen Physicians to Each Clinic.

May 9, 1922.

- 9:00-10:30 Medical Clinic—Dr. W. W. Rucks.
 10:30-12:00 Demonstration, Laboratory Technique—

Dr. W. M. Bailey.

- 9:00-10:30 Genito Urinary Clinic—Dr. J. C. Mraz.
 May 10, 1922.

- 9:00-10:30 Surgical Clinic—Dr. A. L. Blesh
 10:30-12:00 Surgical Clinic—Dr. W. M. Stout.
 9:00-10:30 Surgical Clinic—Drs. Barker and Townsend.
 10:30-12:00 Medical Clinic—Dr. D. D. Paulus.
 10:30-12:00 Demonstration, Laboratory Technique—
 Dr. Bailey.

May 11, 1922.

- 9:00-10:30 Surgical Clinic—Dr. A. L. Blesh.
 10:30-12:00 Surgical Clinic—Dr. W. M. Stout.
 9:00-10:30 Nose & Throat Clinic—Dr. J. C. Macdonald.
 10:30-12:00 Surgical Clinic—Dr. Frierson
 10:30-12:00 Medical Clinic—Dr. J. M. Postelle.

CLINICS ARRANGED FOR BAPTIST HOSPITAL

Dr. N. R. Nowlin, Chairman.

Capacity, 15-20 Physicians to Each Clinic.

Tuesday, May 9th, 1922.

- 8:00-9:00 Gynecology—Dr. Frierson.
 9:00-10:00 Laparotomy—Dr. W. E. Dicken.
 10:00-11:00 Laparotomy—Dr. J. E. Harbison.
 11:00-12:00 Orthopedic Clinic—Dr. Earl McBride.

Wednesday May 10th.

- 8:00-9:00 Gynecology—Dr. Wm. Sanger.
 9:00-10:00 Pediatrics Clinic—Dr.
 10:00-11:00 Tonsilectomy—Dr. W. E. Dixon.
 11:00-12:00 Cleft Palate—Dr. Curt von Wedel.

Thursday May 11th.

- 9:00-10:00 Tonsilectomy—Dr. L. A. Newton.
 10:00-11:00 Radiology Demonstration—Dr. Fred H.
 Clark.
 11:00-12:00 Medical Clinic—Dr. Haskett.

CHAIRMEN OF SCIENTIFIC SECTIONS:

**General Medicine, Neurology, Pathology and Bacteri-
 ology;** Dr. T. H. McCarley, Chairman, McAlester.

Genito-Urinary, Skin and Radiology; Dr. M. M. Roland,
 Patterson Bldg., Oklahoma City, Chairman, Dr. Robt. S.
 Love, 830 American Nat. Bldg., Oklahoma City, Secre-
 tary.

Surgery and Gynecology; Dr. J. M. Byrum, Chairman,
 Shawnee.

Eye, Ear, Nose and Throat; Dr. C. M. Fullenwider,
 Chairman, Barnes Bldg., Muskogee.

Obstetrics and Pediatrics, Dr. W. W. Wells, Oklahoma
 City, Chairman, Dr. J. Raymond Burdick, Tulsa Secretary.

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DOCTOR McLAIN, ROGERS, CLINTON, OKLA.
President Oklahoma State Medical Association
1922-1923.

Born, Clyde, North Carolina, June 5, 1874. Educated at Weaverville College, Weaverville, North Carolina. Graduated in medicine from the Atlanta College of Physicians and Surgeons, April 4, 1902, being class secretary of his class. Is Chief Surgeon of the Clinton Hospital.

WHITHER ARE WE DRIFTING?

By GEO. A. BOYLE,
Enid, Oklahoma.

President's address, Thirtieth Annual Meeting, Oklahoma City, May 9, 1922.

Members of the Oklahoma State Medical Association and Ladies and Gentlemen: To be elected president of the State Medical Association of this great State of Oklahoma is an honor of which any doctor ought to feel proud. I assure you that I am not only gratefully proud, but very sincerely appreciative of this great honor. And I certainly realize and feel the responsibility both to myself as well as to the profession at large. And I assure you that whatever I may have done or attempted to do as your president, has been with an eye

single to the best interests of our profession, and the upbuilding and advancement of organized medicine in Oklahoma.

I find myself in the rather unique position of delivering a president's address on two consecutive years. As you all doubtless know, last year I was merely acting-president—serving out the unexpired term of our deceased, lamented and revered president, Dr. John W. Duke. And right here I want to especially call attention to the fact that we have been most dilatory in carrying out the expressed wishes of this society, in regard to a suitable memorial to our deceased president. I would most earnestly request that our house of delegates take this matter up and attend to it in a proper manner at this present annual meeting. I also desire to call attention to the repeated neglect of many of our standing committees to have their reports in writing and ready to present at the annual meeting. Our house of delegates ought to devise some plan of procedure which would be effective in causing each of these committees to realize the importance of the trust reposed in them, and to act and report accordingly—and promptly.

There have been few innovations in medicine during the year that is past. It gives me great pleasure to state that our Oklahoma physicians are wide awake and fully up to and abreast of the times in all that is new and useful in our profession. Some of us are so engrossed with our work that I fear we do not devote as much time as we should do to Public Health Work in our home communities; neither do we devote as much time to organized medicine and to the promotion and upbuilding of our county societies as we might do. Some of us are either uninformed or else grossly misinformed regarding our policy of medical defense and other matters of vital importance to our state society. And whatever is important to our state society is just as important to each one of us individually. Let us not forget that the State Medical Society is our society and that you and I are integral parts of this society. It would

pay each component, county society, and pay well to devote at least one meeting each year to the study of these various problems and principles; to study the duties of each and every officer, as well as the duty of every member of our societies. Let us find out and know why we pay dues—what becomes of said dues—why we do not pay dues promptly and on time? If we held such meetings it would create and foster good fellowship among us. If we would do this it would vastly increase our attendance and our interest, and the cause of organized medicine would be advanced in our state as never before. We would learn and understand and appreciate the manifold and onerous duties of our state secretary, and knowing these we might stop kicking at him, as we sometimes do, and we might even lend a hand to help him, and Oh, how his care-worn features would light up with a surprised smile of gladness!

In this day and age when we see so many new and wonderful discoveries, inventions and appliances, among all professions and along all lines of human endeavor, it seems to me it may not be amiss for us, as medical men, to pause a moment and consider our own condition as a profession—to take stock as it were of our assets and our liabilities. What have we done or accomplished? What are we doing today? And what may the future hold in store for us?

Born in an age of superstition and cradled and nurtured in an age of darkness and ignorance, is it any wonder that the science of medicine, or rather that medical men have fostered many medical fads and fancies? In spite of all our education and enlightenment, in spite of all our protests to the contrary, most of us are still superstitious to a greater or less extent. Perhaps very few of us carry the left hind foot of a graveyard rabbit about with us as talisman,—but, how many of us really like to see the new moon over our left shoulders? How many of us like to see a rabbit cross our paths, when starting out upon a trip or a journey? I have known doctors who would not begin any important undertaking on Friday. And who really likes to be the thirteenth to sit down at a table? Some one has defined medical superstition as: "Belief that the normal as well as the pathological manifestations of organic life may be explained and eventually treated without consideration of their physical nature by means of supernatural agencies." I have neither the time nor the inclination to enter into a discussion of the history of medicine, nor shall I attempt to

trace the development and growth of our chosen profession throughout the ages; but, in order to elucidate a few of the phases I wish to discuss I must perforce touch—though ever so lightly, a few facts in our medical history.

The history of medicine is coexistent with the history of civilization. We find that in every stage of its development, and in every country, its condition and progress have been most intimately connected with the progress of philosophy, religion and science. During the earliest recorded ages mankind considered all terrestrial processes, whether they were of a physical or of a material nature, as immediately caused by the steady interference of supernatural powers, — a period during which the Deity was held responsible for all terrestrial phenomena. During this period faith became superstition and superstition faith. A separation did not occur until some especially enlightened minds began to explain natural phenomena by natural rather than by supernatural causes. Every physician who has studied the subject at all knows that the history of medicine is closely linked with that of theology. The errors of one are for the most part reflected in the mistakes of the other. Faith and superstition are twin brothers. Although the former leads humanity to its sublimest ideals, and the latter only presents us with a caricature of human knowledge; both are children of the same family. Both originated in a sense of the inadequacy of human science in regard to natural phenomena. The universal belief that both diseases and their remedies were derived from and controlled by their Deities necessarily caused the office of priest and physician to be united in the same person, and the temples of worship became the chief places of resort for the sick.

Everything pertaining to human life or destiny was thought to be controlled by good or evil spirits, and in consequence a God or Goddess was supposed to rule over every line of blessings and curses or evils that visited them. As a logical necessity they attributed all forms of sickness or mental and bodily suffering to the displeasure of some of their Deities, and, of course, to such Deities, they turned with petitions and prayers, and sacrifices, and often with incantations, spells and charms, for relief. Indeed it might be said that their medicine was a part of their religion. In consequence of that doctrine and the ab-

sence of a knowledge of analytical chemistry, the science and art of medicine remained substantially stationary for a period of seven or eight thousand years. And it is to be regretted that we still have some among us, who, notwithstanding all our progress in science, philosophy and art, still regard medicine as a part of their religion; and consequently, when sick they call for prayers instead of physic,—the priest instead of the physician. Nay more, they even deny the very existence of sickness. Such people appear to be incapable of comprehending the fact that the God they worship,—the creator of the universe himself works with materials and in accordance with laws,—and that the true office of prayer is for His guidance in the choice of materials and for wisdom in their application. Thus we see that one of our modern cults had its origin very early in our medical history. It will readily be seen that the history and the practice of medicine date back to the beginning of our civilization; but the real science of medicine dates back only a few centuries. In fact it was not until the nineteenth century, and the latter half of that century that a real science and art of medicine began to be developed or perfected.

Indeed it can easily be proven that gross superstition and a firm belief in many kinds of both black and white magic and other hocus-pocus pervaded the minds and dominated the belief and practice of many if not most of the members of our profession. History clearly tells us that prior to the actual study of human anatomy and the development of analytical chemistry, during the fourteenth and fifteenth centuries A. D., all medical practice was essentially empirical, though usually modified by the prevailing systems of so-called philosophy. And as nearly all the more eminent philosophers of the earlier centuries were also physicians, each attracting to himself or his doctrines more or less numerous followers or disciples, who regarded him as the founder of a system or school of medicine, which they designated by his name—no doubt with his full knowledge, concurrence and consent.

Thus before the Christian era we had prominently the medical schools of Hippocrates; of Plato; of Aristotle, of Asclepiades and of Soranus; and during the ten subsequent centuries, the schools of Galen, of Caelius Aurelianus, of Aetius; of Alexander of Tralles, of Paulus of Aegina; and in Arabia, the schools of Rhazes; Avicenna and Geber. Each of these schools con-

sisted of the observed facts, opinions and theoretical views of the individual teacher or writer and his followers. All of them embraced some items of value, and all of them were more or less influenced by the universal belief in the elementary nature of fire, air, earth and water, and in the four humors and their concoctions—said four humors being blood, phlegm, bile and black bile.

Is it any wonder then that we had so many charlatans and bombastic pretenders, as well as visionary theorists of every grade, in our profession? And I'm sorry to have to admit that we still have them yet. Some of these men—medical men if you please,—have actually formed schools of medicine, basing their tenets and beliefs, not upon strictly scientific investigations, clinical experience and free discussion along legitimate medical channels, but by an appeal to the non-professional public through ordinary newspapers or periodicals devoted exclusively to the advocacy of their special dogmas.

By such means several distinct and rival schools of medicine have been perpetuated in the popular mind, and are recognized in the laws of many of our states, even until and at the present time. The most noted of these is the Homeopathic school, formed by Hahnemann during the last quarter of the eighteenth century. This school or sect grew and increased in numbers and popularity, until the last quarter of the nineteenth century, when they had twelve or thirteen Homeopathic colleges in our country, from which they graduated about 430 persons annually, while at the same time the regular medical colleges numbered one hundred and twenty-four, and graduated more than three thousand annually. I do not know the number of their colleges nor of their graduates at the present time; but I do know that here in Oklahoma at least, we meet but few of this cult; and many if not most of those who now bear the name of Homeopath, have dropped most of Hahnemann's fanciful dogmas,—and I know of some who are practicing regular medicine. And there are abundant evidences indicating that before the middle of the twentieth century, even the name will have become as obsolete as the fanciful dogmas it was invented to designate.

While Homeopathy or the system of Hahnemann was having its birth and development in Germany, an equally fanciful though far more dangerous system of medicine was conceived and promulgated in this country by Benjamin Thompson, who was

born in New Hampshire in 1769 and died in Boston, in 1743. With a very limited degree of education in either literature, science or medicine, he promulgated through the secular press his system and practice which were based upon the following declarations: "Heat is life, Cold is death. Vegetables grow upward and sustain life. Minerals sink in the earth and therefore tend to produce death." Consequently he selected all his remedies from the vegetable kingdom, with the exception of hot water or steam. His list of remedies was, like his knowledge of botany, very brief,—consisting of lobelia inflata, steam, cayenne pepper and a strong tincture of pungent, aromatic herbs, called "No. 6." He discarded the use of all mineral medicines, and was especially severe in denouncing the preparations of mercury, and all physicians who prescribed them.

His usual mode of treatment was to produce free vomiting by full doses of lobelia, followed by steam or vapor baths, and then frequent doses of cayenne pepper or of Thompsonian No. 6.

The simplicity of Thompson's theories, the visible activity of his remedies, coupled with his constant denunciation of the regular profession for using poisonous minerals, caused them to be readily adopted by the less educated, and many of the working classes in all parts of the country. A majority of Thompson's followers, who chose to practice his system, were devoid of any regular medical education, and were generally styled "Steam and Herb Doctors."

Their ignorant and reckless use of repeated emetics of lobelia, and protracted vapor baths, produced fatal exhaustion in many cases, even in the care of Thompson himself, so that he became involved in several suits for malpractice, and soon lost much of his earlier influence.

As his personal influence reached its zenith and began to wane, Dr. Alva Curtis of Ohio, became a leader, with more knowledge of botany, and more caution in the use of lobelia and steam. He designated his system as Botanico-Medical; and in 1841 obtained a charter for a Botanico-Medical College in Cincinnati, Ohio. Later he professed to discard the use of all poisons as medicines, whether mineral or vegetable; claiming all remedies to exert a curative influence must act in harmony with physiological processes; and hence changed the name of his system to "Physio-Medical." He also published a journal and two more colleges were organized—one in Indian-

apolis, and one in Chicago, from which about twenty students were graduated annually from 1881 to 1890. Since then the number of students has seldom equaled the number of their professors.

While Dr. Curtis was leading one part of the original followers of Thompsonianism in the direction of the Physio-Medical system, Dr. Wooster Beach was leading the remainder in the direction of simple Eclecticism, by endeavoring to establish a "Reformed Medical College" in New York. Failing in that another college was organized at Worthington, Ohio, and attracted a few students annually for ten years, when it ceased to exist.

In 1845 a much more successful institution was established in Cincinnati, Ohio, called the Eclectic Medical Institute. Dr. John M. Scudder became professor of practice and pathology, and Drs. J. B. Jones, Wm. Sherwood and John King were also members of the faculty. This Eclectic institute in Cincinnati became the leading college in Eclecticism in America, and during the first twenty years, graduated not less than 1800 students. Since 1900 more than half the Eclectic schools and journals have been discontinued for lack of support, and this sect appears to be in the same state of decline as the Physio-Medicists.

The most active and aggressive stage of both Eclecticism and Homeopathy, was during the last quarter of the nineteenth century. They gained legal recognition and registration in nearly all our states, and in this manner the states presented the absurd position of legally recognizing several distinct and opposing medical theories,—thus perpetrating the erroneous popular idea of competing schools of medicine.

During the closing years of the last century and the opening years of the present century, the most popular and progressive sectarians are the "Christian Scientists;" the "Faith Curers" or the "Divine Healers," the "Magnetic Healers," the Osteopaths, and last, but perhaps not least, the Chiropractors. These latter cults are so familiar to us all that I shall not enter into any discussion of their merits, or what I might designate as their demerits. It is to the renowned and much loved Dr. Nathan S. Davis and his History of Medicine that I am indebted for most of the brief historical resume I have presented to you. "Medical Excrescences" Dr. Davis called these sectarian dogmas or so-called schools.

I have mentioned the rise, decline, and I had almost said fall of most of these earlier sects. I am not a prophet, neither am I the

son of a prophet, but I firmly believe that most if not all of our modern cults will gradually decline and fall,—just as their predecessors have done. Any medical system, or cult or dogma, if founded upon scientific fact, and proven utility, is bound to stand and succeed; just as every cult or “pathy” founded upon some chimerical theory or non-scientific or dogmatical basis, is bound to decline and fall, sooner or later. It remains to be seen what the future has in store for them; but my own personal opinion is that most of our modern, sectarian, offshoots from our medical tree, will, in the fullness of time, gradually sink into innocuous desuetude.

Most men who have been in the practice of medicine for thirty or thirty-five years, have seen the inception, rise and fall of several lesser medical fads and fancies. I well remember the year of my graduation and the then lauded Bergeon cure for consumption. It consisted of a not very complicated apparatus by which the rectum and colon were pumped full of sulphuretted hydrogen gas daily. Nearly every medical man who possessed the few dollars necessary—and especially every recent graduate in medicine, purchased an apparatus and proceeded to pump the lower intestines of his tubercular patients full of this nauseous gas. Some wonderful improvement was noted and “cures” reported, *but*—in less than one year it proved to be utterly useless and was dropped.

Shortly after this a sort of drug nihilism was being preached and taught in many of our colleges,—especially by the younger men of their faculties; and numerous systems of so-called Physio-therapy and drugless healing sprang into being. And it seemed to be the popular thing for recent graduates in medicine to brag over the fact that they had no faith in drugs—did not know anything about drugs anyway. But, somehow, I noticed that when these men or their families became really sick, they invariably called in some old-fashioned practitioner, who administered drugs,—and not in Homeopathic doses either. And, during said illness, not a word is said about drug nihilism either. Indeed I have noticed many changes in the practice of medicine during my own period of medical life. As a boy in Ireland, I well remember our old family physician. He generally bled the patient when called to our house—and often he bled some other members of the family, as well as one or two of the servants.

One of my preceptors often said that in

his boyhood days the practice of medicine was very simple. It consisted in: “Bleeding the patient till he would bleed no more; vomiting him till he could vomit no more; purging him till he could purge no more, and then trust to luck.”

The pendulum has swung to the opposite side of the arc,—whether wholly for the best is a mooted question. Very few of us resort to venesection at the present day. No doubt it is still a most efficient procedure, if properly used.

Homeopathy has taught us palatable prescribing—if nothing else. Few of us now resort to the large and often nauseous doses of our forefathers. This is certainly a boon to the laity, to say the least. Most of the discoveries and work along lines of medical research, which have revolutionized the practice of both medicine and surgery have occurred within the memory of many of the members of our profession, who are still with us—still in the harness, if you please.

It is to Louis Pasteur that we are indebted for our ideas of the germ theory of disease. It was he who proved that fermentation was due to micro-organisms coming from without. His first experimental work was done in the early part of the last half of the nineteenth century. He was really the founder of modern bacteriology. His work in preventive medicine and in the treatment and cure of hydrophobia are perhaps his best known achievements.

Then followed Sir Joseph Lister, noted English surgeon, who first introduced the practice of antiseptic and aseptic surgery. No one now doubts the efficacy of Antiseptic and Aseptic surgery, nor denies the fact that the whole art and practice of surgery have been revolutionized thereby. It was during my first year in medical college that this new surgery was first practiced in this country.

I well remember how, upon my return to Kansas from Philadelphia in 1887 that most of my confreres laughed at me on account of my attempts to practice asepsis. But it was only a short time till those same men came to me to learn how to prepare antiseptic gauze and other surgical dressings. There were no surgical supply houses then making surgical dressings. We had to make our own. There were no textbooks on antiseptic surgery, written or printed at that time. Dr. Robert Morris of New York, had written a small book—really a pamphlet only, entitled: “How We Treat Wounds Today.”

It is unnecessary for me to recount the

wonderful strides of surgery and medicine in all their branches, under the teaching of eminent men in our own country as well as in Europe. It is not necessary to cite the frightful mortality in surgical and obstetrical cases, prior to Listerism, or our own modern system of cleanliness—all this is too familiar to all of us to need recapitulation.

It was during my second year in college that Dr. Morton and his assistants at the old Pennsylvania Hospital first donned white gowns and operating clothes. I well remember that during the summer of 1886, Dr. Samuel W. Gross and his staff of surgical assistants at the Jefferson Hospital, first appeared all toggled out in spotless white. And I shall never forget the laughter and ridicule of the other surgeons at such an innovation.

If some of the old and well-loved family physicians of our boyhood days, could only appear in our midst today, how they would stand in astonishment, wonder and awe, at the changes wrought in the practice of medicine and surgery during the past few decades!

Charles Edward Brown-Sequard, French-English physiologist and neurologist, was the first scientist to work out the physiology of the spinal cord. He was also perhaps the first to do valuable research work on the internal secretions of organs. It was to his memory that our own Dr. Charles de M. Sajous dedicated his first work on the "Internal Secretions" in 1903. Really Brown-Sequard was the forerunner of those who are now assiduously studying the endocrines or the ductless glands. I well remember when he first advocated the use of his "Elixir of Life," and the ridicule it met with from most of our profession at the time. It is amusing to read this from the *Encyclopedia Britannica*:

"Unfortunately in his extreme old age, Brown-Sequard advocated the hypodermic injection of a fluid prepared from the testicles of sheep as a means to prolong human life. This was called derisively, among scientists and medical men generally, his "Elixir of Life." What shall we say of those who are now transplanting into our bodies, monkey glands for the same purpose?

Surely the hosts of men in our profession who are present day advocates of organotherapy, or pluriglandular therapy, are following in the footsteps of Brown-Sequard. And as surely they are not meeting with derision or with ridicule.

This is indeed an age of specialism in all branches of our art,—and rightly so. If there were no necessity for specialism, there would be no specialists. But if we are to believe the writings upon the Rosetta Stone exhumed in Egypt, there were oculists and other specialists even before the Sphinx was fashioned or the Pyramids were builded, even before Osiris poured forth the longings of his heart into the not unwilling ears of Isis, in the soft silvery moonlight, on the banks of the far off Nile.

This is also most decidedly an age of group practice and of laboratories equipped with every modern, scientific appliance, for investigation, diagnosis and treatment; but, we still have with us the family physician. I remember listening to a lengthy paper by one of our leading physicians some thirty years ago, on "The Passing of the Family Physician." But I notice that self-same family physician has not passed out of our midst yet, nor do I believe that he will pass out until Gabriel shall blow his horn. He may have changed his *modus operandi*—or his *modus vivendi*; and he may not carry saddle bags now; in fact he drives a high-powered automobile; yes, sometimes he uses an airplane; *but*, he is still with us—the most competent—the most dependable man in our ranks today.

I do not know how it is in other states, but I do know that in Oklahoma the family physician is capable and indispensable to the nth degree. He takes and reads medical journals; he goes often to our larger medical centers for post-graduate work; he attends, takes part in and supports his county and his state societies.

He is the first to see practically every acute disease or injury, and many of the chronic ailments; and, regardless of the time, the place or the disease, he is prepared, capable, willing and ready to render his professional services, to treat the case to a successful cure—or, if necessary to refer it to the proper specialist. There is just one thing lacking with the ordinary family physician or general practitioner, and that is he seldom receives adequate remuneration for the services he renders. With proper aid and support from his specialist confreres, coupled with his own endeavors, this defect can be remedied. I believe that the laborer is worthy of his hire, and no one denies the fact that the labor, both mental and physical—performed by the general practitioner is not only nerve-wrecking, but soul-trying. All honor, praise and reward then to the family physician, who is now, always has been

and forever shall be, the best physician in our land.

And now to sum up in a few words my own opinion of the regular medical profession and its past, present and future, I want to ask your pardon for this rather common-place illustration: Have you ever noticed a large English mastiff walking down the street or passing quietly along the road, with several small curs barking at him and biting at his heels? Occasionally this large dog may growl at one or cuff another aside, but he never stops or turns aside himself, but calmly and undisturbed he pursues the even tenor of his way.

This mastiff is a good illustration of the regular medical profession, which has gone steadily on and on,—in spite of barkings and bickerings of various sects and cults; in spite of fears and jeers; in spite of dissensions within and misrepresentations from without; in spite of doubts and dogmas.—and ladies and gentlemen, it will continue to go steadily and steadfastly on until time shall be no more.

As I stated last year, I have an abiding faith in the Oklahoma doctor. And I believe that he will never lag behind in the things that make for progress and advancement in our chosen profession.

In closing let me quote from a very old author: "Kind hearers, if this, our performance, doth in aught fall short of promise, blame not our good intent, but our unperfect wit." I cannot better express to you my own sentiments than by quoting to you a few of the closing sentences of Dr. E. H. Skinner, in his president's address before the medical association of the Southwest, in Kansas City last October: "Despite all the campaigns waged against him, the practitioner of medicine finds himself continuously meeting with a more profound respect, a deeper appreciation, governmental recognition, military acceptance, more enthusiastic co-operation from an enlightened and friendly citizenship.

The day of our destruction recedes ever further away into the dim reaches of an indefinite future.

So don't let these petty annoyances worry you, doctor.

Just remember that throughout the whole sweep of recorded history these manipulators of the spine, healers by faith, adjusters of bones, layers on of hands have sought to encompass the doom of the legitimate physician—

And THE DOCTOR IS STILL WITH US!"

CHAIRMAN'S ADDRESS, "THE CLOUD OF IGNORANCE."*

T. H. McCARLEY, A. B., M. D.,
McAlester, Okla.

Chairman, Section on General Medicine, Neurology, Pathology and Bacteriology,

A cloud of ignorance seems always to blind the human race to the laws of health. That darkness which was upon the face of the deep in the beginning is with us yet. It is man's God-given problem to rend this veil in our constant searching after life more abundant. We physicians have chosen as our part the dissolving of that ignorance and prejudice which befog the science of health. Just what has been done to bring humanity into the knowledge and observance of the natural laws necessary to physical well being, is our heritage; and that which remains to be done is our arduous task.

In the treatment of the first division of this theme, our medical heritage, I shall be contented to recall a few medical landmarks; of the second, the present day problems of disease prevention and cure, I shall urge (1) the complete understanding and rigid observance of well established principles of diagnosis and treatment, (2) that we avoid fads and fancies and intellectual shallowness, (3) that future study and experimentation will make clear many of the medical truths now obscure.

Though occasionally penetrated by a beam of light during the early centuries of our era, it was not until the nineteenth century that the fog of hygienic ignorance was widely rent by scientific radiance. If we think of this light as passing through a prism and revealing its spectrum, we behold the brilliance of chemistry, experimental physiology, vaccination, bacteriology, anaesthesia, sanitation and asepsis. I affirm without fear of successful contradiction that the last three mentioned, anaesthesia, sanitation and asepsis were the most beneficent blessing of the century.

The master minds who fathomed the secrets of these branches of science are always the subjects of our veneration, three of whom have long been to me heroes among heroes. To them I pay a passing tribute: Louis Pasteur, Oliver Wendell Holmes and Crawford W. Long.

Louis Pasteur, an unprecocious youth, the son of a tanner and the grandson of a serf, by his persistency along the sure road

*Read at 30th Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May, 1922.

of experimentation, accomplished that which makes him the world's paramount example of persevering genius. Prior to his researches the causes and rational treatment of diseases were no better understood than in the Stone Age. We recall that in addition to his epochal discoveries in chemistry, he assayed to solve the mystery of fermentation and was rewarded by being able to create the science of bacteriology. Though sneered at by the physicians of his day as "a mere chemist" and though a paralytic the last 27 years of his life, his accomplishments were of such transcendent importance that his example can hardly be matched from the labors of all time.

He who has with delight perused the "Autocrat of the Breakfast Table" and then turned to "The Contagiousness of Puerperal Fever" must have been impressed with the versatility of the author, Oliver Wendell Holmes. Poet and essayist of distinction, he was also a sagacious physician who made life saving observations on the then prevalent, pernicious practices in midwifery. He said of physicians and nurses failing to practice what we now term asepsis; "No tongue can tell the heart-breaking calamity they have caused; they have closed eyes just opened upon a new world of love and happiness; they have bowed the strength of manhood into the dust; they have cast the helplessness of infancy into the stranger's arms, or bequeathed it, with less cruelty, the death of its dying parent. The woman about to become a mother or with her new-born infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden or stretches her aching limbs. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly or selfishly."

It is with pleasure and pride that I recall that a country doctor of our Southland, Crawford W. Long, was the first to administer an anaesthetic for a surgical operation. Especially do I delight to honor him at this time because I think that a place recent given another in our Hall of Fame is deservedly his. Without entering into the merits of the Long-Morton controversy, let's remember Long as an impressive example of mental alertness. The fact that feeling the benumbing effect of ether at a so-called "Ether frolic" suggested to him its use in a surgical operation is evidence that his mental "Radio" was attuned to re-

ceive every message which would be helpful to a sick man.

Those things learned by our medical forefathers, among whom those mentioned are striking examples, and by our contemporaries, are ours to use for the relief of suffering and the preservation of life. If we are to use this knowledge to advantage we must have a working familiarity with it; we must know the fundamental diagnostic and curative measures of proven worth. How shall I escape so great a condemnation if I refuse to recognize acute abdominal pain as a contraindication to the administration of purgatives; if I wait until my patient has the hectic flush, deep cough and night sweats to diagnose tuberculosis and then advise him to "go west and get well;" if I ascribe a menorrhagia to the menopause and thereby let pass the time when a malignancy is curable; or if in face of the proven fact that nearly 100% of mothers can successfully nurse their young, I take an infant from its mother's breast and thereby increase in the ratio of at least five to one the probability of its death during the first year of life. These truisms and many others that I might mention are not new but were taught and practiced years ago. My excuse for mentioning them is that they are even now almost as much in evidence in their breach as in their observance. This suggests that there is much more to the practice of medicine than being "up-to-date." To be abreast of the times is fine; to fall for every flaring fad and fancy is ruinous. To illustrate: A year and a half ago there appeared in one of our ultra-scientific medical journals a paper recommending that all diabetics have a high fat with low protein and carbohydrate diet. The conclusion was based on the study of 73 patients, 69 of whom left the hospital alive. Ten months after the publication of this paper the 69 were investigated, 43 of whom could be traced. Twenty-one of these had died! Results I should say which hardly warrant us in making such a radical departure from the accepted therapy of this disease.

But I would not be reactionary. A proper evaluation is due every new product of the clinic and the laboratory. Are not some of them neglected? More or less permanent immunization to diphtheria by means of toxin-antitoxin was shown to be possible several years ago and deserves much more extensive use than it is receiving. The endemic goiter problem has been solved by David Marine and it remains to be seen what practical advantage will be

taken of it. Thyroxin has been isolated by Kendall and is known to be the specific for myxedema. Engelbach has made certain classifications of endocrine disorders which I can from experience testify are of practical advantage to the general medical man.

While we neglect such meritorious measures as these, an intellectual shallowness may render us gullible to the smooth-tongued purveyor of some intravenous "Gen" or "Ven." Intellectual shallowness is content with a hasty apprehension of things and partial apprehension is often little more than misapprehension. It is well for us to remember that error consists often not so much in positively wrong notion as in an inadequate notion. The test of wisdom, it has been said, is the power to evaluate truths, to assign to each its own place and its relative worth. This fact is nowhere better exemplified than in the attitude of the people toward matters of public health. Here we find that one of the most serious difficulties in the way of public enlightenment is not so much the lack of knowledge as the existence of an abundance of prejudice. This ignorance and prejudice can, in my opinion, be overcome only by taking the people into our confidence, teaching them that the practice of our profession is based on demonstrable scientific facts and is not the pursuit of a fanciful theory; convincing them that our only reason for opposing the various cults and charlatans is our desire that the sick man get a square deal. That degree of success which has attended the baby welfare, anti-tuberculosis and cancer-control campaigns emphasizes the possibilities of such educational efforts. May I remind you in this connection that in a generation the psychology of the German people was transformed. Such is the power of education to control, to direct, to dominate!

But what of the future? There is much yet to be learned about the cause and cure of human ills. The specific organisms of many communicable diseases, presumably bacterial in origin, have not been isolated and the treatment of them is therefore symptomatic. Cancer claims its daily toll and the best we can do is, not knowing its cause, to refer the unfortunate victim to the surgeon for salvage. So-called "Essential Hypertension" is bringing too many to an early apoplexy. Dr. Barker has recently stated one of our problems thus: "We already know that ethylhydrocuprein will kill pneumococci, though its deleterious effect on the optic nerve makes it un-

safe as yet as a therapeutic agent. But who knows how soon some enterprising experimental chemotherapist may find a related pneumococcicidal substance that is less harmful to the body, just as the discovery of the relatively innocuous spirilloidal arsphenamin succeeded that of the blindness producing atoxyl? Who knows how soon some one will lay bare the truth about cancer as David Marine has exposed the problem of endemic goiter; or some one will isolate the active principle of the pancreas that will be to diabetes what thyroxin is to myxedema.

In conclusion allow me to say that we do not need arch-angels for physicians, but we do need men and women devoted to scholarship and to high ideals and of enduring faith in man. Let us physicians then conscientiously follow the known principals of diagnosis and treatment of today, avoiding fads and fancies while shunning intellectual shallowness. Let us also take more pains to enlighten an awakened public, at the same time keep ourselves ever alert to glean a new truth and its significance to our chosen profession. In a word, let us do our part to dispel this cloud of ignorance.

CHAIRMAN'S ADDRESS THE CONSERVATION OF VISION.*

C. M. FULLENWIDER, M. D.,
Muskogee, Okla.

One thinks ordinarily of medicine as the healing art. Healing, however, is only one of its functions. Prevention of disease, is really of more importance than its treatment, and in addition, preventive measures are frequently more efficacious than curative ones. In spite of the fact that such efforts tend to destroy the source of their livelihood, medical men have always given much time, thought and effort to the prevention of disease. Many have sacrificed their lives in experiments and investigations in the effort to discover the cause of disease and devise methods for its eradication.

Our own department of medicine offers a particularly interesting field for this kind of work, in efforts directed toward the conservation of vision. Blindness holds for most of us, a horror that would make death a welcome alternative. The loss of vision cuts one off from all his accustomed activi-

*Read at Oklahoma City, Section Eye, Ear, Nose and Throat, 30th Annual Meetings, May, 1922

ties. It not only destroys the principal means by which he acquires information and keeps in touch with his surroundings, but it even to a large extent prevents the use and application of his other faculties. The mental depression is in most cases, so great as to destroy the ambition and paralyze the effort of the adult victim. In spite of an occasional exception, the average victim of blindness, has his economic usefulness so nearly destroyed, that the community not only loses his productive efforts, but in many cases is burdened with his support. Much has been done to make the lot of the blind more bearable. Many states have established schools where he is not only given the ordinary education, but is taught an occupation. His remaining senses are trained so as to compensate as far as possible, for the loss of sight. Free circulating libraries in the Braille system have been established. The Government transports the books and publications, post free. Thus making them available to all Braille readers.

Gradually the realization has spread, that valuable as these efforts of alleviation are, they form only the lesser part of the duty of the state and society, in this matter. A large number, probably a majority of these unfortunates, are blind from preventable causes. A proper distribution of knowledge, enforcement of preventive measures and availability of treatment, will save untold misery and misfortune. Crede's measures alone, have saved an immense number of eyes. No physician graduates from a modern medical school, without being taught the importance of these measures, and yet, judging from the number of children blind from ophthalmia neonatorum, there must be some who do not practice them faithfully and carefully. In 1912, in twenty-one schools for the blind, twenty-nine percent had lost their sight through ophthalmia neonatorum, while twenty-two percent of the new admissions were blind from this cause.

A great deal has been done in recent years, by various organizations, to limit the occurrence of this disease. A determined effort has been made to secure the passage of laws requiring the use of preventive measures. Several states now require the examination and registration of midwives and require them to report all cases of ophthalmia in children under their care. A number require such reports from both physicians and midwives. Several states supply gratis, ampoules of one percent sil-

ver nitrate solution together with directions for its use, and one state requires its use at every birth. Much has been accomplished by education of the laity. Many parents now demand the use of the silver solution and would condemn the physician who neglects it.

Industrial corporations have awakened to the fact that it is good business to guard the health of their employes. In carrying out this idea, they have eliminated a considerable portion of the blindness due to industrial accidents. Emery wheels have been furnished with guards, to catch flying particles. Goggles have been furnished to workmen using such wheels and to those doing chipping, pouring molten metal and performing such tasks as expose the eyes to injury from flying particles. Strange as it may seem, it has proved a very difficult task to get the men to use these safety devices. Iron-clad rules requiring their use and rigid enforcement of these rules have been adopted by some factories in order to protect themselves from financial liability following accidents.

An enormous amount of work is now done by artificial light. Artificial light, is at best, a poor substitute for sunlight, and when this light is poor, eye-strain with its train of attendant evils, becomes a serious matter. In the last few years, the lighting problem has received considerable attention. Again, commercial interests have recognized care of the workman as good business, and the lighting of most shops is now far better than it was a few years ago.

One of the most common causes of blindness and poor vision, in this part of the country, is trachoma. We all know the depressing and discouraging course of this disease. It is usually well advanced before the patient is aware of the nature of his trouble. If the victim is fortunate, it may run a course of a few weeks. Usually it is a matter of months or even of years. The majority of patients are from the poorer classes. The greater number of these poor people are treated for a time, and then, either because they are somewhat relieved of their symptoms, or because they are tired of the treatment or discouraged by the expense, stop treatment. Almost invariably, in such inadequately treated cases, the symptoms return with renewed violence. In a large percentage the cornea becomes involved and only too often useful vision is destroyed. The thing that has impressed me most strongly in dealing with these trachoma cases, is that many of them

are forced to go without proper treatment on account of their financial condition. I think it safe to say that no oculist of standing would refuse to treat a case because of inability to pay for treatment. The physician's fee is but a small part of the problem. The greater number of these cases are from the rural districts and small towns. In order to receive treatment, they must leave home and pay for maintenance in one of the larger towns, or at least make frequent trips to see the oculist. This incurs an expense that frequently can not be met. To a lesser extent, the same thing is true in regard to those among the poorer people, who suffer with corneal ulcer, glaucoma, severe injury and other conditions which lead to blindness. It has seemed to me, that aside from the humane side of the question, it would be good business for this state to provide some form of adequate help for these people. It is certainly cheaper to provide some means to enable a citizen to escape blindness, than to lose the value of his labor and in addition be obliged to provide for his support.

Few of our cities have any adequate charity hospital facilities. Aside from providing a county physician, I know of no provision for the care of such patients by the counties. As I intimated before, the problem is not one of providing the services of an oculist, but of providing food and quarters for these poorer people, so that the oculist's services may be made available to them.

The federal government is taking care of the Indian, but there are a large number of white people in the state that are doomed to become partial or totally blind, unless some organized effort is made to help them. I am not sure that I know what is the best solution of this problem, but it has seemed to me that the most feasible thing would be to provide a state infirmary on the plan of those in Massachusetts and Illinois, where citizens unable to pay for treatment and maintenance could be received and cared for by the state.

I know that individually, every member of this section is doing his full duty to these unfortunates, but we can not provide support and shelter for those who may need our services. I recommend this problem to your consideration, in the hope that we may do something to help solve it.

GALL BLADDER SURGERY IN OBSTRUCTIVE JAUNDICE.*

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*Chairman's Address, Section on Surgery and Gynecology, 30th Annual Meeting, Oklahoma City, May 9-10-11, 1922.

The prominent clinics, both in America and abroad, have been actively engaged within recent years in an exhaustive, systematic study of disease in all its manifestations. Especially has this been true in gall bladder conditions complicated with jaundice. The study of these reports has proved anything but an inspiration. It has, however, increased my respect for our own mortality rate, though distressing as it has been. We find that it remains frightfully high everywhere, in all surgery of the right upper quadrant complicated with jaundice; yet, the death rate has been encouragingly reduced under present-day methods of treatment. It is not the purpose of this paper before this Section to enter into a formal review of this literature, but rather would I summarize some deductions therefrom in the light of our own limited experience in the Shawnee Hospital.

It is the records of necropsy that death occurs, in a great majority of cases, from intra-abdominal hemorrhage, not the active hemorrhage from several arteries, but rather a continuous oozing for several days from the operative field about the liver and, to some extent, within the incision itself. Pressure from retention sutures and dressings have a modifying influence upon the oozing within the incision, but no pressure has proved satisfactorily applicable within the abdomen.

This paper, therefore, resolves itself more particularly into a discussion of the general care of the jaundiced patient before and after the operation, rather than devoting much attention to the technic of the operation itself. It is, however, deemed necessary to say that all steps of the operation in the presence of obstructive jaundice must be carried out with extreme care and gentleness, in order to avoid traumatism to the tissues involved. To me, this means to limit the operation merely to necessary drainage, leaving all radical procedures to a future day when jaundice is not a factor. I do think, however, that all these patients are to be considered as emergency and are entitled to an exploration after proper pre-operative preparation. This is especially true if the jaundice has persisted for several weeks.

I quote Dr. Walters of the Mayo Clinic, who says, "There is no doubt that many cases of cholelithiasis and stones in the common duct have been diagnosed as malignant disease and the patients have been returned to a life of invalidism, since the surgeon did not wish to do an abdominal exploration, in the presence of jaundice, it seemed to entail grave risk."

In the preparation of the jaundiced patient for the operating table, our object is mainly two-fold, viz: prevention of hemorrhage and the treatment of the ever-present toxemia, either one of which being neglected, means sad disappointment.

It is imperative that the coagulation time of the blood of each patient be accurately known. In jaundiced patients, it is usually more than five minutes and may be eighteen or twenty. If this be true, active calcium medication and carbohydrate feeding must be immediately instituted. The coagulation time varies slightly with the method used in determination. Practically each has its own standard of "coagulation time." In the laboratory of the Shawnee Clinic, the capillary tube is used and the time limit quoted in this paper is based upon this particular process. This system, perhaps, is not superior to others, except in convenience; all have their faults. I think it best always to follow one particular method with careful technic and to know the standard of its application.

It was reported some years ago by King and associates that obstructive jaundice results in a loss of blood calcium by its utilization to neutralize toxic bile pigment circulating in the blood and in the tissues. Such neutralization is, of course, an effort to conserve or to protect the tissues of the body; yet it nevertheless results in a disturbance of the coagulation time of the blood by such decrease of available blood calcium. The administration of calcium, therefore, seems to offer the best promise in reducing the coagulation period, as well as to assist in combatting the toxicity of the bile pigment.

In the limited number of patients coming under my care, I have administered from one to two drams of calcium chloride, or lactate, in divided doses, per orum, during the twenty-four hours. I have not failed to get the desired results within from three to five days, notwithstanding the statements of Grove and Vines, that "calcium salts given by mouth have no influence upon the blood calcium." I admit that these salts, so given, may not be uniformly absorbed or assimilated, and there-

fore, may not in all cases have like effect upon the blood calcium, but it is wrong to say that it will not have any effect. One case in point: Mr. B., age 38, entered the service, in grave condition, with coagulation time of nineteen minutes. Twenty grains of calcium chloride was administered every four hours. In thirty-six hours his time was twelve minutes, the third day it was nine, and the fourth day a four-minute period was obtained and operation was done with no untoward results. I did find that on the fifth operative day, the coagulation time had crept back to nine minutes. Calcium was resumed at intervals until well in convalescence with the desired results.

While the administration of calcium per mouth has heretofore proved effective in my cases, it may fail in my next one. I would not hesitate to administer intravenously 20 c. c. of a five per cent solution of the chloride in distilled water daily, at any time I might think it necessary. In case of hazard, I, perhaps, would give it both ways.

The coagulation of blood, so far as we yet know, is a biologic rather than strictly a chemical process and the deficiency of calcium may be only one link in the chain. Under such conditions, its administration does not, of course lower the clotting time. I would not hesitate to resort to blood transfusion in quantities of 600 c. c. in an effort to supply the wanting elements. Transfusion is considered of special value in all hazardous cases as a fortification against shock and hemorrhage and it should be administered the day before the operation and repeated during convalescence, if signs of collapse are manifest. It is Crile's practice to anticipate such emergency by transfusion upon the first symptoms of the development of this grave condition, if it be applicable in the emergency after its actual appearance.

In this connection, I will say that the citrate method of Lewisohn is used by us, after the modified technic of Moss. This was discussed in detail by Dr. F. L. Carson of Shawnee, in a paper on "Blood Transfusion," before this section in the Muskogee meeting and published in the August, 1919, number of the Journal of the Oklahoma State Medical Association.

While undergoing this calcium routine, I would not omit the use of large amounts of glucose in ten per cent solution by Murphy drip, it being taught in many clinics that carbo-hydrates act to prevent

disintegration of body proteins. The administration of large quantities of water in this way and by mouth increases the body fluids and acts very materially in the elimination of the bile pigment and other toxins. Water is also perhaps the greatest factor in the physiological process of oxidation within the body. Without proper oxidation in the body cells, a condition of acidosis supervenes. This does not imply that the alkali reserve is exhausted, for the body solids are largely alkali, but it does mean that this supply is not utilized or, in other words, that the cell function or oxidation is disturbed. Four thousand c. c. is estimated as the minimum amount of fluids for the body within each twenty-four hours during the pre-operative period and I would not decrease this very much below 3000 c. c. after the operation. In fact this amount of water should be given post-operatively in all major cases of whatsoever nature. I have not found that soda bicarbonate added thereto is of much importance.

Finally, it is considered worth while to remark that during the period of obstruction to the outflow of bile, the various functions of the liver are greatly disturbed and the general toxemia, therefore, is a composite picture which is not alone due to the cholemia per se. After the surgical relief of the obstruction or after the outflow of bile is restored by drainage, the persistent application of heat to the surface area of the liver is a most valuable adjunct to the restoration of the hepatic functions. Opiates should be used very sparingly, if at all, and local anesthesia should be used at all times, supplemented very lightly with gas or ether, if needed. Drastic purgation, especially of the so-called cholegogue type, is mentioned only to be condemned, particularly during the pre-operative and early post-operative periods.

GENERAL CONCLUSIONS.

1. Death, after operation in the presence of jaundice, in a great majority of cases, is due to intra-abdominal slow hemorrhage and, when it occurs, it is usually in patients with the coagulation time of five minutes or more.

2. The coagulation time of the blood can usually be restored to safe limits by the persistent administration of calcium salts for a period of three to five days and, in many cases, blood transfusion is valuable.

3. The toxemia and the disintegration

of body protein is favorably modified by the copious use of water by mouth and ten per cent glucose solution by proctoclysis.

4. An exploratory operation, under local anesthesia, is due every patient not definitely known to be cancerous and the operative procedure, in all cases, should be limited to mere drainage, it being recognized that these conditions are always of the emergency type.

5. Post-operative care does not necessarily differ from the pre-operative, except in efforts to restore the liver functions.

6. Morphine, if used at all, must be used sparingly and drastic purgatives are condemned at all times.

THE PROGRESS OF OBSTETRICS.*

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*Chairman's Address, Section on Obstetrics and Pediatrics, 30th Annual Meeting, Oklahoma City May 9-10-11, 1922.

I wish to thank you for the honor which you conferred upon me one year ago, when you elected me Chairman of this Section. I promised you at that time, that, with your full and hearty co-operation, we would uphold the standard of the work done by this Section in previous years. We have had very excellent programs in the past, and this one I hope, will meet with your approval, and bring you a message worthy of the widest attention.

I wish to thank you for your hearty co-operation in responding to my call for papers and discussions, and for the many helpful suggestions received from you. It has given me no small amount of satisfaction, and has made the work of preparing this program, a great pleasure. Now, it is very desirable that you discuss these papers freely, both in Pediatrics and Obstetrics, relating your experience, especially along lines of diagnosis and treatment, and please do not think, that because you have not a large hospital practice, that you may not be a pioneer in some phases of your work. Remember, that many of our best methods of science and art have come from deep thinking physicians, who have had to develop a technique where there was no aid of hospitals, but only an emergency, calling for the best there was in them, and being equal to the occasion, something well worth while was given to the world.

Semmelweis, the discoverer of the

cause, and the inventor of the means for the prevention of childbed fever or puerperal infection, was a close observer, then set forth to prove his decision. It may be, that some here, who do not have the equipment to carry on their discovery, may realize its worth, by giving it to this Society, and see some fellow physician carry it on to a realization of its merit.

We must remember that we do not wish to be like the Chamberlen's of the first obstetrical forceps fame, who tried to keep their secret to themselves or at least within the family, but we are gathering together here, in this friendly meeting, to give and receive, all the information possible to build up our work along the line of Pediatrics and Obstetrics, and may we all feel when we leave this meeting, that we are better qualified to take care of the mother and child.

Only a few years ago, the physician was called to deliver the patient, after the midwife had failed, and if he lost mother or child, he was considered no better than a midwife. Of course, most of the cases that he came in contact with, were already infected by the midwife, who made many vaginal examinations without any of the now recognized antiseptic and aseptic precautions; it was no wonder that they much preferred the midwife to the late called physician, who lost the child, and frequently the mother. The reason that the standard of obstetrics has been kept lower than most branches of surgery and medicine, is because of these midwives, who do not wish the art to leave their hands, and even now you will hear some physician, who is not very familiar with the obstetrical art make the remark, it seems that the cases in the country where a midwife takes care of them, get along better than the ones of his colleague, who is trying to put obstetrics on the right standard. Now that is unfair criticism, fortunately, the laity generally are demanding better service. I believe that the mortality and morbidity has decreased in the last decade. Dr. Holmes has shown by hospital statistics that there has been very little change, but if the statistics were available of mortality and morbidity of the United States, rural districts included, I believe, in fact I know, that there would be a decrease.

The Progress of Obstetrics should be confined to three classes. the Progress of Prenatal care, the Progress in the care during labor, and the Progress in the care during the Puerperium.

THE PROGRESS OF PRENATAL CARE.

Not many years ago there were few not connected with maternity hospitals, who gave their patients any prenatal care, now a thorough physical examination is made. All foci of infections are cared for, as teeth and tonsils. The old adage, "For every child a tooth" is not necessarily true; if the pregnant woman now has infected teeth or tonsils, it is the consensus of opinion of those in authority, that they should be removed or treated. We do not *fear* removing infected teeth or tonsils. Patients do much better if they have no foci of infection to lower their resistance during pregnancy. The removal of these pathological conditions does not interrupt pregnancy.

The routine examination of the urine, the blood, the blood pressure, reveals any abnormal condition and gives us an opportunity to treat our patients before the onset of Toxemia or Eclampsia. If we cannot prevent it, we can at least be warned and prepared to meet the emergency.

The prenatal pregnancy examination will reveal if there is any mal-presentation or mal-position of the child; if there is, it should be corrected. All breech presentations after the seventh month are corrected by external version, and it is very seldom necessary to give an anesthetic. By external bi-manual manipulation we are able without endangering the mother or child to change the presentation to a vertex, thereby reducing the mortality caused by this presentation, which is estimated at 10%. In cases of Placenta Previa (even though the doctor has a rural practice) he should at least have this class of cases come into town, where he can observe them closely and be ready for any emergency. DeLee says all such cases should be in a well-equipped hospital.

At the present time in the larger cities and some rural districts, there are Public Health nurses, who look after the general health of a pregnant woman, and report to the doctor any variation from the normal. We should have a fair idea before the delivery, of the probable course we will pursue.

Dr. J. W. Williams says the most important means of lowering the mortality of conservative Caesarian Section, in cases of disproportion, is by learning to determine before the onset of labor whether an operation will be required. This applies equally as well to other surgical conditions.

THE PROGRESS IN THE CARE DURING LABOR.

In the first stage obstetricians are trying to alleviate the long suffering; each one seems to be working out a method of his own, but morphine and scopolamine seems to have the preference. From the situation it is quite evident that the only treatment is to make the patient as comfortable as possible. All efforts to shorten this stage seem to have been abandoned.

The aseptic care is being more thoroughly carried out, the patient surgically prepared, rubber gloves, and antiseptic solutions where vaginal examinations are made. However, vaginal examinations have almost been abandoned in normal deliveries, rectal examinations have taken their place, and there is no reason why they should not, because any physician who is willing to spend a little time in training himself in the technique of a rectal examination will feel perfectly satisfied with his findings in about 90% of his cases, after making a thorough abdominal and rectal examination.

The second stage of labor is the one in which the most progress seems to have been made, as the patients are demanding some relief from pain, and many obstetricians feel that they are capable and justified in giving them this relief, therefore, we have a great many physicians today who are using gas-oxygen and other methods of anesthesia, some men are bold enough to attempt to relieve the patient of all the suffering of labor by doing a version and extraction. Dr. DeLee, while he does not recommend it as a routine, to be done by all physicians engaged in obstetrics, in his private practice, does his operation which he terms prophylactic forceps. No one who has read Dr. DeLee's article or seen him perform his operation, doubts that he does relieve many cases, where there would be injuries to the child's head, and with his episiotomy and forcep extraction he is able to do a quick delivery, thereby avoiding injuries to child and maternal soft parts.

Now, is the pregnant woman entitled to relief in this stage of labor? I believe that it is conceded that at the present time the average woman has a greater fear of the pains of childbirth, than did the mother of a generation ago, probably due to our manner of living, making her labor more difficult, and certainly she is entitled to all the relief modern obstetrics can give her.

THE PROGRESS IN THE TREATMENT OF THE PUERPERIUM.

The advance in treatment during this period is simply the advance in surgical technique. The greatest mortality we have in obstetrics is still from puerperal sepsis and of which Dr. Thomas Watts Eden, of London, says, is a preventable disease. This being true we should use every precaution against this infection.

The one time famous intra uterine douche has been discarded, and well that it should, as it has been proven that the intra uterine douche forced the infected material from the vagina into the uterus, thereby causing the infection that it was supposed to cure or prevent.

If we knew we had a small piece of placenta retained it is better technique in the absence of hemorrhage, to leave it alone and depend upon position for drainage, and external antiseptic care, than to enter the uterus during the puerperium.

In conclusion I wish to say that the only way to educate the public, so that they will realize the importance of good obstetrics, as they have of surgery, is for us, as physicians to realize that pregnancy as Dr. DeLee says is a pathological process and not a physiological one, and that a majority of our patients will show the effects childbirth and when ever we speak of obstetrics let the general public know that we feel that at least in the majority of cases, a pregnant woman is going to pass through a crisis in which her own life and that of her child is in great danger.

The only way that we will be able to determine before labor whether an operation will be required is to make a thorough examination of the patient and observe her for some time before labor, in other words, if we are more familiar with the condition of the mother and child, we will be able to render stupendous service.

"THE ADVANCEMENTS IN DERMATOLOGY AND RADIOLOGY."*

DR. M. M. ROLAND,
Oklahoma City, Okla.

*Read in section on Genito-Urinary Diseases Dermatology and Radiology, 30th Annual Meeting, Oklahoma City, May 9, 1922.

Thanks are due to the combined efforts of physicists, chemists, and physicians in their various specialties for our vast improvement in diagnosis. We owe much to these workers, and also to the manufac-

turers for the phenomenal advances in radiotherapy.

Those of us who studied dermatology several years ago remember what a tremendous field the disease of eczema covered, together with a formidable number of adjectives. So broad was the field that one could risk it as a diagnosis for a large percentage of cases, about 32% of all skin lesions. Since that time by a more careful study of the etiology and nomenclature the field has been greatly curtailed. Ormsby and Mitchell took off a very large number of eczemas and placed them under the nomenclature of trichophytic infections. The various dermatites also consumed a great many, and the other distinct diseases with their peculiar entities have further reduced the percentage. So that now eczema constitutes only about 2% of all the skin diseases. The old eczema marginatum is really a ringworm or tinea. Squamous eczema is usually lichen planus hyperthrophicus.

In recent years the diagnosis of some of the obscure dermatites has been simplified by the protein tests, which it is hoped will be improved materially. These tests are also of much value in the treatment of hay fever and asthma by eliciting the agent causing the attacks in the individual case. The discovery by Rosenow of focal infections as etiology of rheumatism, neuritis, etc., has been applied to dermatology to a great extent. There is but little doubt that focal infection plays a very important part in the etiology of such diseases as Herpes Zoster, Lupus Erythematosus, Lichen Planus and Erythema Multiforme, if not their actual cause.

The evolution of the X-Ray from its discovery to the present time is very interesting. Radium has played an important role in the development of the X-Ray, besides the great value it has become as a therapeutic agent. The powerful effect of the gamma rays of radium have served at least as a stimulus to the development of the more penetrating Roentgen Rays. The ability to produce the hard rays has imperceptibly increased the field of X-Ray therapy as well as its efficiency. It is no longer denied by the most prejudiced that the X-Ray has a tremendous therapeutic value in the deep malignancies of the uterus, breast and lymphatics. The same is true of certain types of goitre and of tubercular adenitis and fibromata.

Among the superficial conditions which yield favorably to X-Ray treatment are, superficial malignancies, lupus vulgaris, blastomycosis, sporotrichosis, the various forms of ringworm, acne, furunculosis, carbuncles, psoriasis (paliative), Lichen planus (paliative), bunions and corns.

The combined use of X-Ray and Radium, Surgery, Thermo-cautery, including high frequency coagulation and, rarely, chemical cauterization, are curing a greater percentage of malignant cases than has ever been cured before. Radium is so applicable to the actual malignant mass that it becomes indispensable in the successful treatment of such cases, and the X-Ray is just as valuable for the purpose of covering wide areas where necessary.

The question is no longer argued back and forth as to which is the more valuable in the therapeutic field, the X-Ray or Radium. But the question has resolved itself into the selection of the more suitable agent for the individual case or the combination of both, and possibly the assistance of some of the other agents mentioned.

In the treatment of Carcinoma of the uterus, if one has a greater value than the other it would no doubt be in favor of the radium, especially so if the case was an incipient one. In the case of Carcinoma of the breast the X-Ray would be more desirable, especially if the case is an advanced one and the amount of radium is limited as is usually the case.

The greatest advances in the treatment of cancer that have occurred within the last decade are, (1) The improved methods of diagnosis leading to the early recognition of malignant conditions; (2) The education of the laity concerning the frequency of cancer and the conditions for which they should be watchful; (3) The encouragement of the laity to frequently consult with their family physician concerning things that seem trivial, such as lumps in the breast, unnatural flow, keratosis about the face, moles, irregular teeth and badly fitting plates, and in fact all conditions leading to chronic irritation.

We now see a greater percentage of cancer in the incipient and early stages than was true even five years ago, and it is encouraging to note that this percentage is increasing each year.

ANAPHYLAXIS IN RELATION TO ASTHMA, HAY- FEVER, AND ECZEMA

By C. A. DILLON, M. D.
Tulsa, Okla.

It is only a few years since the term anaphylaxis took its place in medical nomenclature. It is defined by Rosenau as "a condition of unusual or exaggerated susceptibility of the organism to foreign protein." Unfortunately this term early came to convey an unfavorable impression, with sinister and ominous connotations. This was because of the misleading and erroneous reports emanating from some of the laboratories concerning the sudden and wholly-unexpected death of various guinea-pigs which were being used as subjects of anaphylactic experiment. Of course the untimely demise of these useful little animals was greatly to be lamented, but the story of their tragic fate should not have been permitted to prevent the employment of a reaction of much practical value and clinical importance.

It is now thoroughly established that experimental and clinical anaphylaxis are two entirely distinct conditions, because protein sensitization does not express itself in the same way in all animals. While the manifestation in the guinea-pig is exceedingly violent, the symptoms, as recognized in man, are relatively mild. One of the best known examples of a general anaphylaxis phenomenon in man is that which follows the injection of such a foreign serum as horse serum (diphtheria anti-toxin) which is characterized by an itching, urticarial eruption, accompanied by fever and pains in the joints—commonly called "serum sickness." The severe and fatal forms of anaphylaxis in man are extremely rare, most cases having occurred either in individuals known to have been sensitive to horse protein, or those suffering from the condition known as *status lymphaticus*.

Protein anaphylaxis is essentially a matter of hypersensitization of the smooth muscle in general, and during anaphylactic shock all the smooth muscles contract. When this occurs in the bronchi the mucosa is thrown into folds causing almost complete occlusion, and in the gastro-intestinal tract the contraction sets up a vigorous peristalsis, causing vomiting and diarrhoea, with involuntary evacuation of the bladder. Its effect upon the arteries is to cause an initial rise in the blood pressure,

followed by a condition of paresis and a fall in blood pressure.

In studying the phenomena of anaphylaxis in their relation to all the protein idiosyncrasis the investigators have collected all possible data relative to the treatment and possible alleviation of some of the obscure conditions dependent upon protein sensitization. So it is now very generally recognized that several clinical conditions are due to a state of hypersusceptibility to protein, and that these various symptom-complexes are dependent upon the general condition of natural sensitization in man. This state of natural sensitization includes a number of so-called diseases, formerly regarded as clinical entities but now thought of simply as different manifestations of one common underlying principle. If the hypersusceptibility makes itself manifest in the eyes and nose, its cause is referred to one of the plant pollens and the condition called *hay-fever*; if the lungs display hypersensitiveness—it may be to several foreign proteins—or perhaps to a chronic bacterial infection, the condition is designated as asthma. A wide range of substances may cause a manifestation of hypersusceptibility in the skin, and the condition will be named urticaria or eczema.

Many vague theories have been brought forward as to the cause of this fundamental hypersensitiveness, but our positive knowledge is still limited to a few facts. However, we do know that certain cases of asthma, hay-fever, eczema and so on, have a very definite relation to some particular protein substance, so that when an individual encounters this substance, either by direct contact, by inhalation or ingestion, he itches, or sneezes, or wheezes, and as soon as he gets away from the substance all his symptoms clear up. Furthermore, we have found out that when a minute quantity of this offending substance is rendered soluble and applied to the skin or mucous membrane of this individual he is sure to experience a violent reaction, but repeated injections of this foreign substance will usually, after a time succeed in bringing about a relief from the symptoms as he would obtain by avoiding the offending substance altogether. These three observations will serve to demonstrate that the patient in question has a marked hypersusceptibility to this particular foreign protein.

There are two marked differences between hypersusceptibility in man and the

anaphylaxis produced in experimental animals. If the guinea-pig survives the shock following the second dose of horse-serum, he will prove immune to a third dose administered within ten days. But patients afflicted with asthma and hay-fever are constantly seen presenting marked local or general reactions to the special protein to which they are sensitive and with which they are being treated, and this despite the fact that they have within a very short time just experienced such another mild reaction. Moreover, naturally sensitization is usually due to several different proteins, while an animal may be sensitized to only one, and when re-injected will react to no other protein than that one. So far as we know animals are never naturally sensitive, whereas the observations of Cooke and Vander Veer led them to announce that at least ten per cent of humankind suffer from some form of anaphylaxis. We would therefore, seem to be justified in concluding that the processes of immunization which underlie hay-fever and asthma are not identical with those which appear to underlie both ordinary anaphylaxis in animals and artificially acquired sensitization in man, so that it may be quite possible that the condition we are now considering is not so truly anaphylactic in nature, as during the last four or five years, we have been wont to regard it.

However, the only reason for examining these various theories and seeking to establish the facts actually so far ascertained is, first, to aid us in making an intelligent diagnosis, and, second, to enable us to plan and carry out a rational and effective line of treatment.

Anaphylactic reactions occur in individuals who have been sensitized to some foreign protein belonging to one of the following principal classes:

1. Food products, animal or vegetable. In this class are to be found a large number of substances, eating which provokes anaphylactic reaction in sensitized persons. Cheese, fish, corn, veal, wheat, eggs, strawberries, peaches, etc.

2. Body emanations, such as horse dandruff and cat hairs, often found to be provocative of respiratory anaphylaxis.

3. Plant emanations, chiefly pollens. Everyone knows the true hay-fever reaction is due to pollen irritation, from ragweed, timothy, daisies, etc.

4. Bacterial products, particularly those of absorbed from foci of infection.

Vaughan has demonstrated that proteins are capable of being split into components, of which one is toxic, the other not. If a foreign protein gains entrance to the tissues, either by injection, through a focal infection, or otherwise, a process of digestion takes place which is designated as parenteral, to distinguish it from normal digestion which takes place in the intestines. By the action of this parenteral digestion the foreign protein is split into its components, and after a certain period of incubation, the toxic protein sensitizes the organism so that any further absorption of the original foreign protein precipitates anaphylaxis.

Sensitization to these proteins is detected by means of a skin reaction, applied in the same manner as the von Pirquet test. A number of small cuts are made with a sharp scalpel on the flexor surface of the forearm, penetrating the skin, but not deep enough to draw blood. The protein, in the form of an extract, or a killed culture of the suspected bacteria is then rubbed into the skin abrasion. In specific reactions within a short time a wheal will be observable on the skin, surrounded by a reddened area; the rapidity and violence of the reaction giving a clue to the degree of sensitization. The test may also be applied intradermally by injecting a definite quantity of the selected protein solution between the layers of the skin. We get about the same result from either of these tests, but it is generally accepted that the intradermal is the more delicate, and the cutaneous, while easier to apply, often presents difficulty in exact interpretation. The intradermal test, however, is limited by the fact that a number of proteins cannot be made soluble in any medium which is wholly harmless to a normal skin, so that these are not available for subcutaneous application.

In making these skin tests we should, of course, be guided by the history obtained from the individual patient. If this suggests possible sensitization to pollens, foods or animal emanations careful skin tests with these substances should be made. I. Chandler Walker of Boston, has given this entire subject years of study, and published numerous exhaustive—I almost said *exhausting*—monographs on the results of his investigations. In eliciting the histories of his patients he takes particular account of the occupation pursued, and the num-

ber, genus and species of all domestic pets with which they may have come in contact. In a series of four hundred he found seventy-eight who were sensitive to animal hair proteins, some to horse—or dog—or cat-hair alone, while others reacted to all three, and the investigation could no doubt have been extended to include an entire menagerie.

Multiple sensitization was frequent among Walker's patients, some of them reacting to all four classes of proteins. Blackfan of Baltimore, and Talbot of Boston, both working with infants and young children, had a similar experience. Blackfan found that the removal of some or all of the animal proteins from the food brought about a great improvement in some cases of eczema in older children and adults, but with infants he was not successful; first, because it is impossible to feed an infant for a long time upon a diet containing no animal protein, without the risk of seriously affecting his nutrition; and second, because there was a strong tendency for the eczema to return, even though there was early improvement upon a protein-poor diet. Talbot found that hereditary pre-disposition played a very important role in the etiology of asthma, 62 per cent of his twenty-eight cases giving a family history of anaphylaxis. Where there was a pronounced heredity of hay-fever, asthma or eczema, he urged special caution in introducing new proteins into the diet. He was more successful than Blackfan in de-sensitizing his infants to cow's milk, by administering it in carefully graded amounts until it was perfectly tolerated.

Hay-fever may be regarded as a particular type of asthma, but it is noticeable that it never appears in a person whose nose and accessory sinuses are in a perfectly normal condition. In all asthmatic cases it is of the utmost importance to search for foci of infection in the nasal accessory sinuses and also to look for reflex irritation of the vagus resulting from pressure or other irritation of the nasal nerve supply. The bacterial proteins which cause sensitization are most often absorbed from foci of infection in the teeth, tonsils, nasal sinuses and gall-bladder, and the study of each case of anaphylaxis should include a careful scrutiny of every possible toxic source. Sometimes a thorough physical examination will reveal a cause apart from protein sensitization which will account for all the patient's difficulties. One of Rackemann's

cases after several months of unavailing treatment for asthma due to food allergy, was found to have pulmonary tuberculosis, and another had her asthmatic symptoms entirely removed by the removal of an ovarian cyst.

Even when the diagnosis is established beyond a doubt, there still remains a wide latitude in the matter of treatment. If a specific case has been proven against a certain article of food it may be eliminated from the patient's diet. If this is not practical—as in the case of an infant with cow's milk—a specific immunity may usually be built up by the injection of minute doses of the protein, gradually increased. To avoid animal emanations and pollen-laden air would seem to offer a simple way out of the difficulties these agencies have been proved guilty of causing; yet everyone is not able to abandon his ordinary work and place of abode so as to escape these contacts, and for these individuals the value of establishing a specific immunity is especially great.

In most cases of hay-fever, if proper surgical work, especially on the nasal sinuses, has been done, and the pollen sensitization worked out, practical freedom from symptoms may be secured for the season by immunization which should precede the opening of the season long enough to have the specific resistance well established at the beginning. As this immunity lasts only a few months it will have to be re-established the following year, but for this only a relatively short course of the pollen injections will be necessary.

Summing up this brief survey of a subject upon which much has been published, but of which, after all, we still know very little, it would appear that sensitization or hypersusceptibility is peculiar to man, and is probably a disease entity which includes a number of clinical conditions, such as asthma, hay-fever or eczema. The diagnosis of this condition is comparatively simple, the difficulty arises in picking out the particular protein responsible for the symptom-complex which the patient presents. A careful history must first be elicited, and this will usually indicate what proteins may be employed in making the skin tests by which the correctness of the diagnosis must be judged and the plan of treatment mapped out. This treatment usually consists in avoidance of the offending protein, or if this is impossible, in desensitizing the patient to it.

Good results have followed the use of

these measures, though there are still many aspects of the subject which are yet to be investigated.

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Discussion

Dr. Gayfree Ellison, Norma: I enjoyed the paper very much. Something new for most of us. As Dr. Yeakel has pointed out many difficulties arise when attempting to use these tests in your office in general practice. It is frequently difficult to determine just which protein the patient is hypersensitive to. They often react to more than one. This we have found is especially true of the plant pollens. The reaction, however, is usually more marked to one, the offending protein.

It is important to know the particular substance that is toxic to the patient, as the polyvalent plant extracts have not been found very successful. Most of the reliable biological houses have discontinued the production and sale of polyvalent extracts.

We have had the best results with the test proteids and pollen extracts sold by the Arlington Company. They do not sell any polyvalent extracts. The point in regard to the focal infections as a contributing factor in bringing on an attack of asthma is

important. A person may be hypersensitive to some food protein or epidermal proteins, but not sufficiently so to bring on an attack of asthma. If, however, he develops a focal infection as abscessed teeth or infected tonsils the asthma comes on, when he comes in contact with or eats the offending protein. In such cases the clearing up of the focal infection relieves the asthma.

Even after careful tests to determine the offending protein or pollens and selected treatment we fail to relieve the patient.

This is, we believe, due to the fact that the patient may be hypersensitive to more than one substance and possibly the predominating one was overlooked or the patient should have been treated with more than one pollen extract.

Closing Discussion

Dr. Dillon, closing: I haven't very much to add to my paper. I think this new work in relation to these conditions is going to be very helpful to us.

Dr. Yeakel was surprised that I made no mention of the endocrines as a possible factor in this condition. Of course, this paper has only to do with anaphylaxis and I do not know what the relation of the endocrines are to these varied conditions.

I read my paper before the Tulsa County Society at their last meeting and Dr. Ball raised the same question. He felt that thyroid extract, etc., was very helpful in certain cases. It might be but I am not prepared to say.

The skin test is very spectacular and it often requires sixty or seventy tests of the protein before you find positive protein.

I find alfalfa, timothy and ragweed the most common pollens to react in hay-fever cases.

THAT HOUSTON HOSPITAL.

As we read the congressional report of the Houston hospital for ex-service men, how it is a model institution thoroughly approved by the government investigators, we are irresistibly reminded of the Tulsa gentlemen who on a day when it was thought desirable to force Oklahoma into establishing a two-million-dollar hospital declared the Houston institution to be a cesspool wherein Oklahoma ex-service men were being tortured to death.

The World promised then the facts would sooner or later be set forth. It stated then that it was monstrous to believe that a sister state was any less effective in its hospitalization affairs than Oklahoma would be if charged with such responsibility.

Truth is frequently a fugitive thing, but always it establishes its supremacy over falsehood, intrigue and mercenary misrepresentation sooner or later.—Tulsa World.

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive the Journal should call for immediate notification of the editor, 508 Barnes Building, Muskogee, Okla.

Local news of possible interest to the medical profession, notes on removals, changes in address, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application. It is suggested that wherever possible, members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

EDITORIAL

TRANSACTIONS, THIRTIETH ANNUAL MEETING, OKLAHOMA STATE MEDICAL ASSOCIATION, OKLAHOMA CITY, STATE CAPITOL BUILDING, MAY 9-10-11, 1922.

HOUSE OF DELEGATES: STATE CAPITOL, May 9, 1922, 1:00 P. M.

Call to order by the President, Dr. G. A. Boyle.

Moved and carried that minutes of the preceding annual meeting at McAlester be approved and not read, inasmuch as they had been published in full in the Journal of June, 1921.

The Credentials Committee consisting of Dr. P. P. Nesbitt, Muskogee; Drs. W. L. Kendall, Enid, Chairman, and Ellis Lamb, Clinton, which it was announced by the

President had been appointed at a prior meeting of the Council, read its report of the qualified list of delegates which had up to that time presented credentials. Report accepted and committee continued.

The Secretary-Treasurer-Editor filed his report (see report) for the year beginning May 1, 1921, and ending April 30, 1922 (May 1, 1922, as April 30th this year fell upon Sunday). The report was accepted and ordered filed. In this connection it was stated by the President that the report with all books, duplicate deposit sheets, cash books, ledgers and all other papers of the office had been referred to an auditing committee of the Council, composed of Drs. J. L. Austin, Chairman, Durant; J. T. Slover, Sulphur; and M. E. Stout, Oklahoma City, which committee would report its finding (See report) at a later meeting of the House or Council.

A Resolutions Committee composed of Drs. Chas. H. Ball, Chairman, Tulsa; A. S. Risser, Blackwell, and F. H. McGregor, Mangum, was appointed.

Reports of standing committees being called for the Committee on Study and Control of Tuberculosis filed its report signed by Drs. Horace T. Price, Chairman, Tulsa, and C. W. Heitzman, Muskogee (See reports).

The Committee for the Study and Control of Cancer made a report by its Chairman, Dr. E. S. Lain, Oklahoma City, whose remarks considered the scope, amount and general character of the work undertaken over the State through the efforts of his Committee which has been acting in conjunction with the National organization, of which body Dr. Lain is a member and State Chairman for Oklahoma.

Dr. Rufus M. Whiddon, Gainesville, Texas, presented his credentials to the House as Fraternal Delegate from the Texas State Medical Association. He was given the privileges of the floor at all meetings and made generally welcome.

The House adjourned until Wednesday, May 10th, 8:30 A. M., at the Huckins Hotel.

HOUSE OF DELEGATES; May 10, 1922
8:30 A. M.

Call to order by the President.

The Credentials Committee made its final report which was accepted. Election of officers being the next order of business ballots were distributed and the following nominees were placed before the House:

For the office of president-elect:

Drs. E. S. Lain, Oklahoma City; G. H.

Butler, Ralph V. Smith, Tulsa; and J. A. Walker, Shawnee.

The point of order being made that Dr. Lain by reason of being a member of the House, was ineligible by Constitutional provision, the Chair so ruled and his name was stricken from the list of nominees.

The ballot resulted in Ralph V. Smith receiving 28 votes, J. A. Walker 10 and G. H. Butler 17. At this time it was moved by Dr. Chas. H. Ball, Tulsa, that the election of Dr. Smith be made unanimous, which motion with slight alteration prevailing, the Secretary was instructed to cast the vote of the House for Dr. Smith for President-elect.

The voting for vice-presidents resulted in the selection of Drs. E. S. Ferguson, Oklahoma City, as 1st; W. A. Tolleson, Eufaula, 2nd, and E. B. Dunlap, Lawton, 3rd vice-presidents.

Dr. W. Albert Cook, Tulsa, was named as Delegate to the American Medical Association for the year 1923-1924.

Councillor selected for the 3rd District was Dr. Walter C. Bradford, Shawnee; for the 5th, Dr. J. L. Austin, Durant, to succeed himself, and Dr. P. P. Nesbitt, Muskogee, for the 8th District.

Tulsa was selected as the next meeting place.

Dr. J. M. Byrum, Chairman, Legislative Committee, then took the floor asking that the members everywhere take more personal interest in the nominees for office. Noting the inherent, but latent, unused, dormant power for good politically, held by the doctor, Dr. Byrum asked that they take occasion to scrutinize the nominees closely and try to favor those who stood for sane legislation.

The Secretary-Editor asked the House to express its ideas as to the value of the "Clinical Society Reports" for a long time appearing rather regularly in the Journal, stating that more or less criticism was being given him on that account, the charge being usually that he "favored" Oklahoma City. He stated for information of the House that he had for many years extended invitation similar to that upon which Oklahoma City acquired the privilege of filling the space, but that no acceptance of the invitation had ever been had except occasional sporadic, case histories, and case reports from individuals, that the invitation still stood open, that it was his belief that the most good was done to the most members by that type of reading matter, but that it was appreciated that the Journal was the property of every

member and should be conducted in principle mainly as the members directed. Dr. C. H. Ball, Councilor, Tulsa, discussing the matter, stated that he was among those objecting to the present arrangement, that he believed *every* paper read at the annual meeting should be printed in the Journal before any other matter, then if there was any space left it might be used for clinical society reports. Dr. J. Hutchings White, Muskogee, disagreed with him, holding the clinical society reports were superior. Dr. Thompson stated that to publish *every* paper read at the annual meeting would be ruinous and also practically impossible, that some of them by having no amount of treatment could be made fit for publication, that as the Journal now stood it ranked fairly well among state publications, that it must be divided up into sections, each devoted to certain specific subjects if it were maintained as a well-balanced medical publication. The entire matter resulted in a motion authorizing the Secretary-Editor to select three advisors to whom such matters could be submitted.

Dr. Wann Langston, Chairman, Committee on Medical Education, Oklahoma City, submitted that committees' report for the year (See reports). The report was accepted and the committee continued.

A message of Fraternal Greeting was read from the Southern Medical Association.

The Auditing Committee reported that it had completed its audit of the books of the Secretary-Treasurer and that his report as filed was correct and approved. The report was accepted and the committee discharged.

The Council's Subcommittee appointed to hear the appeal of Drs. O. J. and J. T. Colwick vs. Bryan County Medical Society, filed its report as follows, which was adopted:

Oklahoma City, Oklahoma,
May 10th, 1922.

To the Council of the Oklahoma State Medical Association:

We, your Committee, appointed to consider the appeal of Dr. O. J. Colwick, from the decision of the Bryan County Medical Society, beg leave to make the following report:

That the action of the Bryan County Medical Society be sustained; however, we recommend that at the expiration of one year dating from May 1st, 1922, said Dr.

O. J. Colwick be reinstated as a member of the Bryan County Medical Society, provided his conduct has been of such a character as to recommend him for such action, and that a committee of two, composed of Dr. J. T. Slover and Dr. L. S. Willour, be authorized to investigate the conduct of the said Dr. Colwick at the expiration of one year and that their recommendation receive favorable action by the said Bryan County Medical Society.

We further recommend that the charges now pending before the State Board of Medical Examiners against the said Drs. J. T. and O. J. Colwick be withdrawn.

Respectfully submitted,

L. S. WILLOUR,
J. T. SLOVER,
L. A. MITCHELL,
Committee.

Oklahoma City, Oklahoma,
May 10th, 1922.

To the Council of the Oklahoma State Medical Association:

We, your Committee, appointed to consider the appeal of Dr. J. T. Colwick, from the decision of the Bryan County Medical Society, beg leave to make the following report:

That the action of the Bryan County Medical Society be sustained and we recommend the doctor to the gracious consideration of the County Society.

L. S. WILLOUR,
J. T. SLOVER,
L. A. MITCHELL,
Committee.

The House then adjourned.

C. A. THOMPSON, *Secretary.*

(Lack of space prohibits inclusion of report of the Council meetings which will appear in the June issue.—Thompson, Secretary.)

REPORTS OF OFFICERS AND STANDING COMMITTEES FILED AT THE OKLAHOMA CITY MEETING.

REPORT OF COMMITTEE ON MEDICAL EDUCATION.

Owing to the effective campaign of the Council on Education of the American Medical Association (now the Council on Education and Hospitals) the last decade has seen a remarkable advance in the standards of medical education. The bet-

ter medical colleges have continuously raised their standards, the less efficient ones have been compelled to bring themselves up to the standard by raising their requirements, increasing their facilities, and perfecting their organizations, while the "diploma mills" have practically ceased to exist. So that on July 1, 1921, of 83 medical schools in the United States, 68 or 82% were classed as acceptable.

ESSENTIALS OF ACCEPTABLE MEDICAL SCHOOLS.

I. *Requirements of the Student.*

1. For Admission:
 - a. A four year High School course.
 - b. Two years of pre-medical college work, including chemistry, physics, biology, English and a foreign language.
2. For Advanced Standing:
 - a. Documentary evidence of work satisfactorily completed in acceptable medical schools.
3. For Graduation:
 - a. A satisfactory completion of four sessions of medical study of 32 weeks each, two years of pre-clinical or laboratory branches, and two of clinical work in a well regulated teaching hospital.

II. *Requirements of the School.*

1. Efficient supervision by the Dean.
2. Full and complete records of all students, patients and instructors.
3. At least eight fully time specially trained teachers of the laboratory branches.
4. A clinical faculty of thoroughly qualified clinical teachers.
5. Adequately equipped laboratories for class work and research.
6. Ample library facilities under the management of a competent librarian.
7. Control of a large well organized general hospital, with additional facilities for teaching diseases of children, nervous and mental diseases, and communicable diseases; and at least six maternity cases for each student.
8. A large and well regulated out-patient clinic.
9. At least 30 necropsies a year.

PRESENT TENDENCIES.

- I. Rearrangement of the course of study along more liberal lines, eliminating

non-essentials, stressing fundamental and clinical study, and allowing the student opportunities for elective studies.

- II. Grouping of all departments of the medical school about the teaching hospital, which is looked upon as the center of teaching activities.
- III. Insistence upon better facilities for medical research.
- IV. Requirement of a fifth year in an accredited hospital for graduation.

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE.

In an effort to carry as much benefit to the entire profession of the state as is possible with our present facilities and funds, the University of Oklahoma, School of Medicine is planning the publication of a bi-monthly bulletin on the laboratory research and clinical work of the School of Medicine and the State University Hospital, which will be mailed to every doctor in the state. The librarian of the School of Medicine has likewise been authorized and instructed to furnish without charge bibliography upon any subject desired by any physician in the state and upon deposit of a nominal sum to cover actual cost, to send him upon request copies of Medical Journals except current and bound issues. It is hoped that not too much will be expected of this service in the beginning. With better facilities and sufficient appropriations it is hoped that this service may be made very valuable to the profession of the state and that abstracting service may be given in addition.

With the abundance of material available and the high quality of service being rendered in both laboratory and clinical investigation the School of Medicine needs but an undivided location, an adequate and well equipped Medical School building in conjunction with the State University Hospital, and a sufficient maintenance appropriation to take a position second to none, and to carry the benefits of these investigations to every doctor in the state.

This Association has already gone on record as favoring an adequate appropriation for a Medical School building. Your committee recommends that the Association also go on record as favoring a unified location and adequate maintenance appropriation. We also recommend that some designated committee for the coming

year be authorized to undertake the crystallization of sentiment for the consummation of these ends, and that the Association give its full support to this movement.

WANN LANGSTON,
Chairman.

A. B. CHASE.
W. A. FOWLER.

REPORT OF THE TUBERCULOSIS COMMITTEE, May, 1922.

Due to the lack of funds rather than to the lack of interest, organized effort in the fight against tuberculosis has been more or less handicapped. However, in each county where the nurse demonstrator and organizer of the Public Health Committee has visited, the communities have displayed much interest. During the year three State Sanatoria have been opened. The one at Talihina being filled to capacity. The most encouraging sign that we are getting to the "beginning" of tuberculosis is the decided improvement noticeable in school inspections. These inspections are now assuming a more systematic nature, as for instance, after recording the weight of pupils in each school, and in not only preaching open air, but demonstrating its practical utility in the use of open air schools. One feature of these inspections that cannot be too strongly stressed is the relief of defects of respiration by timely advice as to the removal of tonsils and adenoids. The following up of these cases to their homes and the instruction given as to sanitation, sleeping quarters, and the use of proper food is also being pushed with more than good results. The prenatal talks and examinations of pregnant women, and the follow-up work after birth of the children cannot be too strongly recommended. Each year adds to the number of counties organized and employing the services of a visiting nurse. Thus constantly keeping the subject before the laity, they are becoming more and more interested. Physicians throughout the state are graciously offering their services in this warfare whenever their co-operation is required. The State Health Association sustained a great loss in the death of the General Secretary, Mr. Jules Schevitz.

Respectfully submitted,

CHAS. W. HEITZMAN.
HORACE T. PRICE,

Committee on Tuberculosis.

ANNUAL REPORT, SECRETARY-
TREASURER-EDITOR, OKLAHO-
MA STATE MEDICAL ASSO-
CIATION, FOR THE YEAR
ENDING APRIL 30th,
1922.

*To the Officers and Members, Oklahoma
State Medical Association:*

Gentlemen: In conformity with the requirements of the Constitution and By-Laws, I herewith submit condensed statement of the various transactions of my office from May 1, 1921, to April 30th, 1922. For your information you are advised that detailed report together with all books, deposit books, cash books, ledgers, duplicate deposit sheets and certified statements from bank officers showing various balances to your credit in the different funds, has been submitted to the Council and its auditing committee for examination, verification and report from that body to you.

DEATH OF OUR MEMBERS.

It is with regret that we have to chronicle the deaths of the largest number of our members ever known in the year. Twenty-one have passed to the great beyond, the departed being:

Robert J. Baze, Chickasha, Grady County.

Andrew J. Brewer, Coweta, Wagoner County.

T. W. Brewer, Oklahoma City, Oklahoma County.

J. Wade Boon, Sapulpa, Creek County.

Thomas Lee Chambliss, Hugo, Choctaw County.

K. L. Colley, Bigheart, Osage County.

Milton F. Decker, Comanche, Stephens County.

Emmett Dill, Boynton, Muskogee County.

P. M. Harraway, Marlow, Stephens County.

Joseph Henry Jansing, Cushing, Payne County.

Sessler Hoss, Muskogee, Muskogee County.

Robert S. Lynn, Tulsa, Tulsa County.

James Foster Means, Claremore, Rogers County.

William C. Pendergraft, Hollis, Harmon County.

Gaylord Ames Stafford, Keifer, Creek County.

William J. Taylor, Fairview, Major County.

George W. Tilley, Pryor, Mayes County.
William Tidball, Sentinel, Washita County.

Edward H. Troy, McAlester, Pittsburg County.

Benton Lovelady, Okemah, Okfuskee County.

James M. Vaden, Ada, Pontotoc County.

Fitting tribute to their memory will, no doubt, be rendered by your committee charged with that duty.

MEMBERSHIP IN GENERAL.

For the first time since our reorganization and fusion of the two territories we have experienced a slight decrease in membership. That it is of material importance or indicative of any particular cause, cannot be said, indeed it is much less than was anticipated by those giving the matter thought and having before them conditions in other organizations and cognizant of business depression generally prevailing over the country. That ours among all others, ours certainly harder than any one among vocations and professions, has, as is always the case, had to bear the brunt of the excuse encompassed in the brief words, "Hard Times," was to be expected. All except the pessimists among us should be well satisfied with the situation. That some of it could have been avoided goes without saying, had we had the co-operation due our organization from the man more responsible than any other, though most unappreciated as well as an unrewarded servant, the County Secretary, the story might have been somewhat different, generosity should absolve everyone probably from the weight of responsibility, provided we concurrently resolve not to let it happen again.

THE JOURNAL.

Despite the fact that business depression has been very general, that many advertisers, either wholly withdrew from the field for the time being or greatly reduced their space, your Journal is rightly entitled to congratulations. Advertising receipts alone are \$1,212.87 above the previous year's receipts. We have been unable to profit by any material reductions in cost of Journal publication and production, except for a short time recently. However, I feel safe in the assurance to you that our next report will show not only a greater gain as to receipts but that due to lessened costs, we shall be able to once more lay aside some savings for the

rainy day. We have had to make a complete change in printing companies, and it is believed that hereafter we shall have at least as good a Journal as before at a considerable reduction in its costs.

ADVERTISERS.

I take this opportunity again to ask your support for those who support you with their advertising contracts. It is regrettable that every member cannot keep in mind the fact that we have a very high class of commercial houses giving them their advertising support, that they should be fostered in every way, favored with every bit of business we may possibly give them. Certainly it is not fair practice to patronize houses whose only connection with us is to accept our orders and money to their profit only, with never the slightest possibility of one cent of it returning to Oklahoma in any form. That it is short-sighted and not creditable to us, has been reiterated annually for years. We shall again have to restate the proposition and urge you strongly to help us and yourself, which you may do with profit and satisfaction to all concerned.

MEDICAL DEFENSE.

This Department as our membership has been often warned has also shown a decided increase in the number of actions brought against our members. This, too, is due to the War's ravages, to its certain accompaniment of poverty and shrinking incomes, plus the natural greed and dishonesty of a small percentage of people, aided and abetted by conscienceless attorneys, more dishonest even than the ignorant client they delude into thinking he may mulch some good physician. The irritating presence of that impossible, soulless, shriveled bit of humanity, inspirator of baseless malpractice charges against his fellow, must once more be dignified by official notice. That he is a regrettable factor in production of trouble is too well known to those of us charged with the duty of reading the complaints or petitions filed with its consequent reading between the lines and deduction. We nearly never see these papers, without somewhere in the case crops out this in substance, "Dr. So and So inspired this suit." "This is a frame up, Dr. — did it," or words to that effect. Invariably we insist upon every bit of proof substantiating these charges, but like all nauseous, slimy things, they are often hidden in the dark, dark, background of unmanliness and cowardice. We

occasionally have the unbelievable exception, however, and that is in the case of the brazen professional, who throws good sense, honor and discretion to the winds and openly admits his part in the unwarranted assault upon a colleague. The poor, untenable excuse offered that personal troubles are sufficient excuse, while not worth a figment to men of proper ideals, are brought forward by those of low or no principle as justification for the lack of appreciation on their part of the simplest rules of professional conduct between men. This situation is the only one prompting recurrent rage and the wonder if it would not be well to wholly abandon medical defense if we have this spectacle of one hand constantly in the silly attempt to undo the work of its fellow. That they should be tolerated as members for a day after being found in such dangerous attitude is only due to the habit we have fallen into of according forgiveness when none is due on any ground.

It is due that our membership should also take notice of the unwarranted injustice done the medical defense committee and your secretary in a small number of cases where, under the rules there is nothing to do except decline defense of certain applicants for it, who have forfeited their rights by neglect of easily executed forethought and timely action as to insignificant details. Rarely can the member be made to understand that it is his own acts or lack of them which brings about a refusal to defend him. That he makes it a personal matter and unjustly criticizes everyone, is a matter borne too long in silence.

Your Committee desires to have you also note decision not to extend defense in what is known as the Fuller vs. Washington County Society and others, case. Application for defense in this case was made on behalf of twenty-one members of the Washington County Society, the application construing certain allegations of the Plaintiff as bringing the membership under charge of malpractice. Competent legal opinion was deemed advisable, and that opinion rendered your committee was that the allegations did not constitute, by any possibility, charge that could properly be denominated malpractice. On the other hand the opinion was clear in the idea that conspiracy was the charge made against the members, and therefore, not defensible. The case having so many unusual features and the demand that the Association enter it for defense purposes was so unusual that

report of it is deemed advisable.

List of cases handled from May 1, 1921, to April 30th, 1922:

CASES DISPOSED OF.

Ralph Stallings, by next friend, vs. Tulsa Hotel Assn. and Ray Wiley. Tulsa County. Malpractice, \$25,000.00. Case filed April 9, 1919. Tried in April, 1922. Verdict for \$2,000 for Plaintiff. Settled by Insurance Company in April, 1922.

J. F. Pool, et al. vs. Dr. J. K. Lindsay and J. B. Morgan. Garvin County. Malpractice, \$20,000.00. Case filed December 23, 1920. Case prepared for trial, answer filed by us on January 22, 1922. Case dismissed in March, 1922.

Stewart Wilson vs. Dr. R. A. Felt. Tulsa County. Malpractice, \$5,000.00. Case filed December 7, 1920. Motion to make petition more definite and certain filed February 2, 1921. Answer filed. Case dismissed December, 1921.

Steve Harrison vs. Dr. A. B. Holsted. Cotton County. Malpractice, \$750.00. Case filed February 26, 1922. Answer filed March 16, 1922. Case dismissed April 2, 1922.

Edgar Nelson vs. E. O. Barker and H. W. Larkin. Logan County. Case filed September 19, 1921. Answer filed October 18, 1921. Case dismissed November, 1921.

John R. Ashworth vs. McLain Rogers. Custer County. Case filed March 21, 1921. Answer filed April 20, 1921. Case dismissed April 5, 1922.

CASES PENDING.

J. A. Montgomery et al. vs. J. C. Jacobs. Ottawa County. Case filed April, 1917. Pending on appeal in Supreme Court of Oklahoma.

John F. Cannon vs. Dr. W. C. Smith. Tulsa County. Case filed January 7, 1919. Case at issue and will probably be set for trial within the next 60 days.

Ollie Berry, by next friend vs. J. F. Capps and R. E. Rhodes. Tulsa County. Malpractice, \$35,000.00. Case at issue and will probably be set within next 60 days.

George P. Long vs. Dr. Francis R. First. Osage County. Case filed March 19, 1921. Answer filed July 26, 1921. Case at issue and liable to be set for trial any time.

Amelia Long vs. Dr. Francis R. First. Osage County. Case filed March 19, 1921. Answer filed July 26, 1921. Case at issue. Liable to be set for trial at any time.

Joe Robb, a minor, etc., vs. Drs. A. P. Geargart and W. M. Leslie. Kay County. Case filed February 25, 1921. Tried March 8, 1922. Verdict for Plaintiff for \$10,000. Case to be appealed by defendants to Supreme Court of Oklahoma.

Henry C. Scott vs. Oscar C. Klass. Muskogee County. Case filed June 8, 1921. Answer filed July 6, 1921. Case liable to be set at any time.

W. L. Harrell vs. Drs. S. Stevens, John Tidmore and T. W. Dowdy. Carter County. Case filed July 16, 1921. Answer filed for Dr. T. W. Dowdy. Case liable to be set at any time.

J. A. Dobbs vs. Dr. Geo. S. Barber. Comanche County. Case filed September 22, 1921. Answer filed October 21, 1921. Case liable to be set for trial any time.

W. T. Boling and Belle Boling vs. Chas. E. Shaff, Recr. M. K. & T. Ry. Co. and Dr. George A. La Motte. Oklahoma County. Case filed

March 5, 1922. Motion to make petition more definite and certain filed April 6, 1922.

Joe Younger, a minor, by J. S. Younger, Guardian vs. Dr. A. H. Bungardt. Washita County. Case filed April 10, 1922. Now pending.

THE RIGHT AND VALUE OF MEMBERSHIP.

This office has had several cases officially brought to it, wherein complaint was made that societies had attempted expulsion and suspension of the right of membership without first carrying out the details demanded by the constitution and by-laws. The practice, if continued, is so prone to bring severe retaliation and injury in the form of counter civil actions on the part of those so wronged, that notice of it is warranted. Society membership is a prized, valuable possession, which cannot be taken from a member except by process of a just and exact procedure. This procedure is so simple that failure to observe and respect it seems impossible. That snap judgment, hurried, indefinite and incomplete charges and allegations against a member can not be used as basis for his expulsion or suspension is clear. Great care should be taken in every such case to see that exact and impartial justice be shown everyone concerned. Any other line of procedure may result in serious consequences to those taking improper action, and especially is this true should the element of conspiracy to injure a physician be established during resultant civil action looking to redress of the wrong. This is noted here as a precautionary matter and voices the hope that no society will permit its occurrence.

Financial statement attached.

Respectfully submitted,

C. A. THOMPSON,

Secretary-Treasurer-Editor.

Muskogee, Oklahoma,

May 3, 1922.

FINANCIAL STATEMENT.

Medical Defense Fund.

Receipts.

May 1, 1921—	
Balance on hand, in	
bank	\$ 1,977.42
From Interest	50.00
Oklahoma State Medical	
Association	1,000.00
Total Receipts	\$ 3,027.42

Expenditures.

Certificate of Deposit,	
4%, Commercial National Bank, Muskogee, Oklahoma	\$ 1,150.00
Attorney Fees paid	1,560.10
Balance cash on hand, in	
bank, May 1, 1922	317.32
Total Cash and Expenditures	\$ 3,027.42

Assets; Medical Defense Fund.

May 1, 1922, Cash balance.....	\$ 317.32
Time Deposit, 4%.....	2,500.00
Time Deposit, 4%.....	1,150.00
War Savings Stamps.....	926.00
Total Medical Defense Fund.....	\$ 4,893.32

**Oklahoma State Medical Association.
Receipts**

May 1, 1921—	
Balance on hand in bank.....	\$ 3,029.33
Advertising.....	5,883.72
Subscriptions and Copies.....	21.80
County Secretaries.....	6,660.17
Exhibit Spaces (Annual Meet).....	297.50
Short Time Loans.....	3,390.39
Refunds.....	3.00
Interest — Liberty Bond and Time Deposits.....	131.51
Total Receipts.....	\$19,417.42

Expenditures.

Reporting Annual Meeting, McAlester.....	\$ 445.69
Printing.....	7,878.83
Secretary's Salary.....	1,237.50
Stenographer and Clerical Work.....	1,540.50
Office Supplies and Miscellaneous.....	175.69
Press Clippings.....	60.00
Telephone and Telegraph.....	70.88
Postage.....	220.00
Boston Meeting A. M. A. Expense Incident to McAlester Annual Meeting, 1921.....	50.06
Refunds.....	43.40
Treasurer's Bond.....	10.00
Auditing Books.....	15.00
Transferred to Medical Defense Fund.....	1,000.00
Donation Okla. Public Health Assn.....	18.55
Commissions paid on Advertising Contracts.....	59.97
Xmas presents to Printer \$25 and Steno \$10.....	35.00
New Underwood Typewriter and Repairs.....	107.35
Office Rent 1920 to 4-30-21.....	150.00
Office Rent 5-1-21 to 3-30-22.....	220.00
Attorney fees paid on Collections of Advertising accounts.....	10.72
Short Time Loans paid.....	3,390.39
Interest paid on short time loans.....	86.31
Checks returned unpaid (afterwards made good).....	73.60
Paid for time deposit.....	500.00
Total Expenditures.....	\$17,887.18
Cash on hand in bank May 1, 1922.....	1,530.24
Total.....	\$19,417.42

Assets: Oklahoma State Medical Association.

Cash in bank May 1, 1922.....	\$ 1,530.24
Time Deposit, 4%.....	500.00
Liberty Bond.....	500.00
Total Okla. State Med. Association.....	\$ 2,530.24
Total Medical Defense Fund.....	4,893.32
Grand Total Assets.....	\$ 7,423.56

PERSONAL AND GENERAL

Dr. C. F. Loy, McAlester, has moved to Wilburton.

Dr. and Mrs. C. E. Kahle, Drumright, visited Hot Springs in April.

Dr. E. B. Mitchell, Lawton, visited Indiana friends and relatives in May.

Dr. A. S. Neal, Cordell, attended the New Orleans clinics after the Oklahoma City meeting.

Dr. F. L. Watson, McAlester, recently experienced a call from a burglar who, after inventorying the office, left empty-handed. A burglar with poor judgment, else he would let the doctors alone.

Dr. E. A. Leisure, Afton, who underwent a surgical operation at Augustana Hospital, April 24th, reports that he is still among the living and proposes once again to join the great class of food consumers.

Dr. M. Smith and Sisters of the Immaculate Conception, Oklahoma City, have been made defendants in a \$50,000 damage suit, which it is alleged as basis that the infant lost an eye as a result of infection.

Dr. J. H. Kay, Durant, who has been doing special work at Vanderbilt in genito-urinary, laboratory and X-ray for several months, has returned to his first love and will engage hereafter in the specialties above indicated.

Dr. W. J. Wallace, Oklahoma City, visited the Atlantic City meeting of the American Urological Association in April, after which he visited the Philadelphia clinics, finishing the trip with a seance by Hugh Young, of Baltimore.

Dr. W. W. Woody, Tulsa, has been appointed Tulsa's City Health Officer. For the first time in her history the city will have, in Dr. Woody, a full time health officer, which, by the way, is a consummation devoutly to be desired, in others than Tulsa.

Washington County Medical Society was given a treat by a clinic under direction of Drs. John Outland and W. L. McBride, Kansas City, Mo., April 22nd, the day the institution was formally opened to the public. The hospital starts off with a very good corps of student and graduate nurses. After the day's work was completed a dinner was served to the attending physicians and their wives. Many physicians were present from nearby cities in Kansas and Oklahoma. Altogether about forty physicians were present.

Marlow Hospital has just opened its doors to the public. It is in control of Dr. P. B. Hall, Harlow, and open to all physicians.

Oklahoma City Physicians have been granted exemption from certain traffic regulations, which will permit them to park in restricted zones.

Middlemen Cut Out in the regulations of a Western Oklahoma Wheat Growers' Association, prompted a farmer in that section, when his wife become ill to send for the undertaker. The undertaker finding the woman alive, protested, saying, "you do not need an undertaker, you need a doctor." "No, I don't, I'm cutting out the middleman, I need an undertaker."

St. Anthony's Hospital Nurses Home promises to be the most modern and complete as to every detail looking to the comfort and well-being of the nurses so far in existence in the southwest. The building, now in process of erection, is said to be the last word in what a home for the student nurse should be. Among the innovations will be a gymnasium, shower-baths, library and many of the refinements of a real home.

Guthrie's Methodist Hospital, a new structure, which, with the nurses' home cost \$52,000.00, was formally opened to the public May 12th. The authorities, with fitting idea, selected that date, the National Hospital Day, and arranged for a broad program for the occasion. Bishop E. L. Waldorf, of Wichita, Kansas, delivered the address of the day, while addresses were also delivered by representatives of many of Guthrie's civic and commercial organizations.

Radium Insurance to within 75% of its valuation is the latest curative offered to suffering owners of that valuable metal. The innovation was born from an idea of Dr. George E. Phaler, Philadelphia, who interested insurance experts in the matter until finally a suitable policy was evolved, according to the United States Radium Corporation. The Insurance Company of North America will carry the risks. Alberti, Baird and Carleton, 50 Pine St., New York, are the agents. Two per cent per year is the cost of the policy.

Craig and Nowata County physicians held a joint meeting at the Eastern Oklahoma Hospital, Vinita, May 2nd, when Dr. F. M. Adams, the Superintendent acted not only as scientific host, but under the hospitable direction of Mrs. Adams, the visitors were given an example of what may justly be termed "high living," for if ever men sat down to and enjoyed a well-balanced repast, those fortunate to be present did that.

Drs. C. J. Fishman, Oklahoma City, and Claude Thompson, Muskogee, presented a clinic and paper, respectively. Dr. Fishman very ably and clearly presented the problems incident to hydro and hyper-thyroidism. He was fortunate in having abundant material for demonstration and the entire subject was as thoroughly treated as possible in the time allotted. Dr. Thompson read a paper on "The Doctor's Office," the subject dealing with the necessity and satisfaction of the possession of an orderly, systematically and efficiently kept office. Special stress was given the disastrous effects of insanitary, unsightly offices and an attempt was made to enumerate some of the staple needs which should be found in every office, without which the physician could not render efficient and just care to his clientele.

DR. THOMAS WILLIAM BREWER

Dr. Thomas W. Brewer is dead. Although we are sorely grieved and cast down at his going away, we are proud of the fact that we were associated with a man of his ability and sterling qualities. I find myself still too much under the shock of his untimely departure to write dispassionately of him.

Dr. Brewer was a real man, and the news of his death comes as a shock to all his friends and those who knew him intimately. He stood for the things that go to make for better conditions in the home, the city, the state and the nation.

He was his own worst enemy, in that he served both day and night, but to his own detriment and often without promise of reward in any guise.

He had a host of friends who now fully realize his services to them, and his true worth to them, since has gone away.

Dr. Brewer was sick only thirteen days and his suffering was intense but he endured it bravely, good soldier that he was. He was always thoughtful of his patients and deeply interested in their welfare and many of them thought of him as a father as well as a physician.

As our friends and loved ones pass from life's rough sea through the shadowy vale to the great unknown we are made to realize more fully the uncertainty of human life.

Dr. Brewer was born in Athens, Ohio, August 25, 1863, and graduated from Marion Sims Medical College in 1901.

He is survived by his widow, two sons and one daughter. He also leaves three brothers, two of whom are successful physicians, also one sister, who also resides in Kansas.

The body was sent to Minneapolis, Kans., for interment, where the last sad rites were attended by a host of relatives and friends who live in that state. Of him can be said: "You were humanity's best friend. Through your good offices we were ushered into the world. You watched over us and guarded our health from infancy to old age, and during the transition from life to death, your presence made the going easy."

DR. R. M. SHAW.

Woodward County Society, according to the Secretary, Dr. C. W. Tedrowe, met in Supply, April 14th, and had dished up to the members an innovation in the form of a highly successful meeting, replete with many good things. Forty-five doctors were present and were entertained by Dr. and Mrs. E. L. Bagby and the Hospital staff. The clinic of the morning consisted of hernia, cataract and cystocele operations. Dr. J. M. Workman, Western Oklahoma's venerable medical leader, acted as toastmaster at a two o'clock luncheon. Dr. Walthall, Kansas City, gave a talk on the Schick Test, discussing in detail some of the phenomena of antitoxin and its administration, noting that a negative Schick was had in children under one year; positive in those from one to five and in 90% and those from six to adults gave 50 to 75% positive. Among other things Dr. Walthall noted, and which we would have shouted literally from the housetops, so far

MONROE ARCHER WARHURST

Dr. M. A. Warhurst, Sylvan, for many years one of the State Medical Association's strong supporters and a member of enthusiastic and useful interest in all its affairs, died at his home May 6th, from focal meningitis.

Born at Salisbury, Mo., September 21, 1864, he received such literary education as the common schools of that country then offered, attending at the end of his studies Pritchett Institute. After that time he attended the Chicago Medical College (now a part of Northwestern University), graduating from that school in 1899. He was licensed to practice in Oklahoma in August, 1902. Before locating in Oklahoma he practiced for a time near Ft. Smith, Arkansas, moving to Cameron, Indian Territory in 1901, where he practiced until 1905 when he moved to Pottawatomie County and has since that time lived and served his people well and faithfully.

There are left to mourn his departure, a wife, three sons and two brothers and five sisters.

His remains were removed to Ft. Smith, Ark., where interment was made.

as that certain percentage of our members are concerned, who act as initiators and producers for the undertakers, is the fact that he gives and advises giving huge doses without fear of consequences, that a child may receive as much as an adult with safety. He uses from twenty to forty thousand units as the initial dose. In severe cases he advises intravenous administration in conjunction with subcutaneous administration.

STANDING COMMITTEES.*

Legislative—Drs. A. K. West, Majestic Bldg., Oklahoma City; J. M. Byrum, Shawnee; G. A. Boyle, Enid; C. A. Thompson, Muskogee.

Hospitals—Drs. Fred S. Clinton, Chairman, Oklahoma Hospital, Tulsa; M. Smith, Colcord Bldg., Oklahoma City; C. A. Thompson, 508 Barnes Bldg., Muskogee.

Medical Education—Dr. Wann Langston, Chairman, Oklahoma City, University Hospital; Dr. A. B. Chase, Colcord Bldg., Oklahoma City; Dr. W. A. Fowler, Oklahoma City.

Tuberculosis, Study and Control—Drs. Leila Andrews, Chairman, Colcord Bldg., Oklahoma City; Horace T. Price, 303 Palace Bldg., Tulsa; C. W. Heitzman, 508 Barnes Bldg., Muskogee.

Health Problems in Education—Drs. J. T. Martin, Chairman, 200 W. 14th; J. R. Burdick, Hotel Ketchum, Tulsa; A. S. Risser, Blackwell; Edw. F. Davis, 313 American National Bldg., Oklahoma City.

Cancer, Study and Control—Drs. LeRoy Long, Chairman, Colcord Bldg., Oklahoma City; E. S. Lain, Patterson Bldg., Oklahoma City; Gayfree Ellison, State University, Norman; McLain Rogers, Clinton.

Veneral Disease Control—Drs. W. J. Wallace, Chairman, 830 American National Bldg., Oklahoma City; Ross Grosshart, Tulsa; J. H. Hayes, Enid.

Vision, Conservation—Drs. W. Albert Cook, Chairman, Palace Bldg., Tulsa; D. D. McHenry, Colcord Bldg., Oklahoma City; John R. Walker, Enid.

Committee on Benefactions—Drs. L. J. Moorman, Chairman, 1st Nat. Bldg., Oklahoma City; J. White, Muskogee; R. V. Smith, Daniel Bldg., Tulsa; L. A. Turley, Norman; McLain Rogers, Clinton.

*This list is published bi-monthly.

COUNCILORS AND THEIR COUNTIES.

District No. 1. Texas, Beaver, Cimarron, Harper, Ellis, Woods, Woodward, Alfalfa, Major, Grant, Garfield, Noble and Kay. A. S. Risser, Blackwell. (Term expires 1924.)

District No. 2. Dewey, Roger Mills, Custer, Beckham, Washita, Greer, Kiowa, Harmon, Jackson and Tillman. L. A. Mitchell, Frederick. (Term expires 1923.)

District No. 3. Blaine, Kingfisher, Canadian, Logan, Payne, Lincoln, Oklahoma, Cleveland, Pottawatomie, Seminole and McClain. Dr. Walter Bradford, Shawnee. (Term expires 1925.)

District No. 4. Caddy, Grady, Comanche, Cotton, Stephens, Jefferson, Garvin, Murray, Carter, and Love. J. T. Slover, Sulphur. (Term expires 1924.)

District No. 5. Pontotoc, Coal, Johnston, Atoka, Marshall, Bryan, Choctaw, Pushmataha and McCurtain. J. L. Austin, Durant. (Term expires 1925.)

District No. 6. Okfuskee, Hughes, Pittsburg, Latimer, LeFlore, Haskell and Sequoyah. L. S. Willour, McAlester. (Term expires 1924.)

District No. 7. Pawnee, Osage, Washington, Tulsa, Creek, Nowata and Rogers. Chas. H. Ball, Tulsa. (Term expires 1923.)

District No. 8. Craig, Ottawa, Delaware, Mayes, Wagoner, Cherokee, Adair, Okmulgee, Muskogee and McIntosh. P. P. Nesbitt, Surety Bldg., Muskogee. (Term expires 1925.)

OFFICERS, OKLAHOMA STATE MEDICAL ASSOCIATION, 1922-1923.

President, 1922-1923, Dr. McLain Rogers, Clinton.
President-Elect, Dr. Ralph V. Smith, Daniel Bldg., Tulsa.

First Vice-President, E. S. Ferguson, Oklahoma City.

Second Vice-President, W. A. Tolleson, Eufaula.

Third Vice-President, E. B. Dunlap, Lawton.

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ABSTRACTS, OBSERVATIONS, FROM CURRENT MEDICAL LITERATURE.

LABORATORY WORKER INFECTED BY RAT GERM.

State Health Department Announces Important Discovery Resulting from Accident to Young Woman Scientist Studying Epidemic Jaundice.

Accidental infection of a young woman bacteriologist from a rat which she was examining in search of the germ of epidemic jaundice has furnished the first direct evidence that microbes harbored by these rodents can induce that disease in human beings, according to a report recently submitted to Dr. Hermann M. Biggs, State Commissioner of Health, by Dr. Augustus B. Wadsworth, Director of the Division of Laboratories and Research. A microbe believed to be the inciting agent of epidemic jaundice has been found in both human beings and in rats in Japan and in France, and later in wild rats captured in New York City; but not until direct evidence was furnished by this infection of the laboratory worker in Albany has there been a convincing demonstration that the germ found in the American rats is capable of infecting human beings.

This new contribution to medical knowledge came as the dramatic climax of two months or more or less fruitless effort on the part of the State Health Department Laboratories to find the organism which caused the widespread outbreaks of infectious jaundice reported from various parts of New York State toward the end of 1921. Several such groups of cases had been studied by the officials of the Department and the local circumstances clearly indicated its infectious character. Accordingly a branch laboratory was established at Syracuse and there and at the central laboratory in Albany hundreds of specimens from rats and from patients affected with jaundice were examined in an effort to find the so-called "leptospira" which was described in 1914 by a Japanese bacteriologist, Inada, as the cause of epidemic jaundice. In the course of the studies made since the first of January 128 rats from various parts of the State had been examined and the organism had been identified in 22 of them, all of which came from Albany. During January and February a total of 511 specimens from 132 human patients had also been examined, with negative results in all cases. Just as the search for the organism in human beings was about to be given up temporarily, one of the assistant bacteriologists who had been doing most of the work on the rat at the State Laboratory in Albany pricked her finger with a needle and became severely ill with a fever, from which she has since entirely recovered. Specimens of her blood which were injected into guinea pigs produced in the animal the symptom of jaundice and examinations of specimens from these animals has resulted in recovery of the organism.

"On Friday, February the 3rd," said Dr. Wadsworth's report, "one of our laboratory workers who was preparing for the inoculation of a rabbit with a virulent culture of the leptospira from a rat pricked her finger with the needle of the syringe containing the culture. The wound was cleaned and disinfected and there were no symptoms until the evening of February

10th when a fever commenced, accompanied by general malaise, nausea and vomiting. Although the patient's temperature reached 104 degrees there was no sign of involvement of any of the organs. In fact, the diagnosis was quite obscure until cultures of the leptospira were finally obtained. Forty-eight hours after the onset a specimen of blood was taken for culture and for the inoculation of guinea pigs. The direct examination of the blood specimen showed a few forms resembling leptospira which, however, could not be definitely identified. Further specimens were taken on the fourth day but no definite evidence of the presence of the organism was obtained until February 24th, when one of the guinea pigs inoculated on February 12th developed jaundice. The following day a second guinea pig, inoculated on February 14th, also developed jaundice. It was at once chloroformed and examined and the characteristic forms of the leptospira were found. The result of the examination therefore leaves no question as to the diagnosis of jaundice."

Dr. Noguchi of the Rockefeller Institute, was the first scientist to find the jaundice organism in rats in this country some years ago. This organism resembles very closely the germ recently discovered by Dr. Noguchi and supposed to be the cause of yellow fever. As soon as he learned of the discovery at the State Laboratory, Dr. Noguchi kindly came to Albany to check over the technical details of the work and to lend the benefit of his long study and experience with this group of micro-organisms. He took back to New York with him specimens of blood from the patient which proved to be negative on direct examination but when some of the blood was later injected into guinea pigs at the Rockefeller Institute these animals also developed jaundice, thus confirming the findings previously reached.

"In this accidental infection of the human being with the germ being studied," said Dr. Biggs, commenting on Dr. Wadsworth's report, "we have a clear fulfilment of the requirements laid down by the eminent scientist, Robert Koch, as necessary to show the causal relationship of a micro-organism to disease in man. It is of immediate, practical importance to know that rats harbor a germ which will thus infect human beings. In fact, the more we learn about rats the more evident becomes their relation to various diseases of man, and the more urgent appears the need of unrelenting war on these loathsome pests.

Published by courtesy of New York State Department of Health and their Health News Service.

NEW BOOKS

PRACTICAL MEDICINE SERIES, 1921.

Volume 7, Skin and Venereal Diseases, edited by Oliver S. Ormsby, M. D., Professor and Head of the Department of Skin and Venereal Diseases, Rush Medical College, and James Herbert Mitchell, M. D., Assistant Professor and Chief of the Syphilis Clinic, Department of Skin and Venereal Diseases, Rush Medical College. Illustrated, Cloth 243 pages. Price \$1.75. The Year Book Publishers, 304 South Dearborn St., Chicago.

Volume 8, 1921. Mental and Nervous Diseases. Edited by Peter Bassor, M. D., Assistant Professor of Mental and Nervous Diseases, Rush Medical College. Illustrated, cloth, 249 pages. Price \$1.75. The Year Book Publishers, 304 South Dearborn St., Chicago.

THE ADVERTISER IN BELLES LETTRES.

Progress in the art of advertising has been marked by certain high points which include, for example, the scientific study of display, the application of the fundamental laws of the psychology of vision; the employment of noted artists and litterateurs for the preparation of copy, and, finally, the utilization of unusual methods for attracting the reader's attention. Sometimes, however, the results of the application of the esthetic arts to commercial purposes is highly incongruous. A recent issue of the house organ of a pharmaceutical specialty house contains several advertisements of glandular products. Presumably in order to attract the attention of readers, the names of famous writers are used. Thus: Montaigne, the noted French essayist, who died of nephritis, is utilized to suggest that if his physicians had known of "Nephritin" they would have been able to furnish him with "substantial constructive help," a statement which may be more readily accepted by litterateurs than by pathologists. Joaquin Miller, the poet, just before his death, issued an announcement to the effect that the simple life would prevent indigestion; ergo, since all of us cannot live the simple life, we must depend on Peptenzyme. Thomas Hood, the great humorous poet, fell ill and his wife made broths, soups and other nourishing dishes for him, but poor Hood did not improve and slowly passed away. "Therefore," says the advertiser, "use Trophonine," which it is claimed, is a palatable liquid food. Finally, Victor Hugo during the siege of Paris wrote: "Yesterday I ate some horse. Today it is dog, maybe it is rat. God help us; we are eating the unknown. Is it any wonder that we are all constipated?" "Like Victor Hugo," proclaims the advertiser, "millions today are eating the unknown, and are paying the toll in constipation. 'From whatever cause it originate . . . Pancroblin is always indicated.' One may picture the shades of Montaigne, Miller, Hood and Hugo, on the slopes of Parnassus, pointing with pride to this twentieth century echoing of their literary achievements. Alas, where they now are Nephritin, Peptenzyme, Trophonine and Pancroblin cannot avail.—*Jour. A. M. A.*, April 1, 1922.

THE SURGICAL CLINICS OF NORTH AMERICA

(The Philadelphia Number)

The Surgical Clinics of North America (issued serially, one number every other month). Volume II, Number I (The Philadelphia Number) 331 pages, with 145 illustrations. Per clinic year (February, 1922, to December, 1922). Paper \$12.00 net; Cloth \$16.00 net. Philadelphia and London: W. B. Saunders Company.

This issue of a very fine work contains an array of talent well known to the medical world. Astley P. C. Ashhurst presents the greatest number of offerings, dealing principally with malignancy, among which his "Carcinomatous Stricture of the Rectum;" "Carcinoma of the Sigmoid;" "Pelvic Abscess from Carcinoma of Flexure of Colon;" "Carcinoma of Ascending Colon;" "Carcinoma of Hepatic Flexure-Inoperable;" "Carcinoma of Hepatic Flexure; Resection, Colostomy, Recovery" as a part of his work. John B. Deaver presents: "Duodenal Ulcer, Pylorotomy, Posterior Gastro-jejunostomy;" "Adenocarcinoma of Left Breast, Radical Amputation with Resection of the Axillary Glands;" "Transperitoneal Hysteroto-

my;" "Recurrent Cholecystitis; Cholecystectomy;" Renal Calculus; Pyelotomy;" and "Cyst of the Liver with Excision." P. G. Skillern presents "Surgical Lesions of the Ulnar Nerve at the Elbow;" "Ununited Fracture of the Radius and Ulna; Inlay Bone-grafts;" "Comminuted Fracture of the Head of Radius; Resection;" "Ununited Fracture of Transverse Process of Fifth Lumbar Vertebrae; Massive Callus; Ablation of Distal Fragment with Callus;" Edmund J. Piper; J. Chalmers DaCosta; Charles H. Frazier; Brooke M. Anspach; George P. Muller; John H. Jopson; Warren B. Davis; John Speese; Damon B. Pfeiffer; Floyd E. Keene; George M. Dorrance and J. W. Bradfield, jointly; John F. X. Jones and J. Stewart Rodman are other contributors to this justly superior issue. Each and every one of the offerings are classics in their particular field and the entire work goes to maintain the well known supremacy of the system.

MELANO-EPITHELIOMA OF PALATE.

Only twenty-four instances of primary melano-epithelioma of the palate were found in the literature by Gordon B. New and French K. Hansel, Rochester, Minn. (*Journal A. M. A.*, July 2, 1921). One case at the Mayo Clinic, which was observed in 163 cases of melano-epithelioma of the body in general and thirty-two primary epitheliomas of the palate, makes a total of twenty-five cases. The patient was a man, aged 62, who had a tumor about 1 cm. in diameter of the right side of the palate which he had noticed one month before by feeling it with his tongue. The tumor had grown very rapidly. A piece of the growth was removed by the patient's home physician, and microscopic examination revealed melanosisarcoma. The patient had not worn dental plates, and there was no history of trauma or pigmentation on the palate. The tumor had bled slightly on several occasions. A slight defect in the speech was the only symptom manifest. The tumor was cauterized thoroughly with soldering irons, and twelve days later 5 mg. of radium was applied to the open wound for ten hours with no screening except the radium container, less than 1 mm. in thickness. Eleven months afterward there was a recurring growth on the palate.

RADIUM EMANATIONS IN TREATMENT OF GOITER.

Wallace I. Terry, San Francisco (*Journal A. M. A.*, June 25, 1921), inserted eight tubes of radium emanations, representing 10 millicuries, in the case of a patient with an extreme degree of hyperthyroidism with exophthalmos. He has employed a similar procedure in ten other cases. The dosage of emanation has been reduced to 6 or 7 millicuries and is contained in about six minute capillary tubes. The technic is simple. Under local anesthesia, a spinal puncture needle of small caliber, with an emanation tube loaded in the hollow needle, is introduced into the thyroid. The tube is pushed out of the needle by an obturator slightly longer than the hollow needle. This procedure is repeated until all the tubes containing radium are deposited in various parts of the thyroid gland. The emanations thus act from within the goiter and tend to inactivate it and prepare the patient for operative treatment should it be deemed advisable.

THE THERAPEUTIC USE OF YEAST AND VITAMIN PREPARATIONS.

The medical profession is unquestionably facing a problem in connection with the current widespread public propaganda for the therapeutic use of yeast and so-called vitamin preparations. Every person who reads—whether it be the monthly or weekly magazines, the daily newspapers, or even the billboards—is likely to find gratuitous reminders that he is confronted with menaces to health which not only ought to be averted but can readily be remedied, when present, by the simple expedient of a potent medicine or proprietary product. This is not a novel situation. Medical, like social and economic panaceas, belong to every age. They are called forth by a variety of provocations. Frequently a real danger, difficult to cope with, uncertain in its outcome, widespread in its incidence, elicits a score of alleged remedies. If cholera or infantile paralysis or influenza chances to gain a foothold somewhere, the offers of "sure relief" are not slow in following. Sometimes they are asserted to be curative, or again merely prophylactic. Usually they are the devices of the quack, quick to profit by a serious situation; but it would be unjust to the better elements in human nature to deny that many of these remedies for our ills represent the earnest intent of well meaning persons to help in time of trouble. They all too often fail to take into account the limitations of our knowledge, on the one hand, or the helplessness which often springs from an actually irremediable condition of disease. Under such circumstances, the public and even the physician may grasp for any straw—even against the dictates of his own wisdom and experience.

If some of the claims of the advocates of a wide-spread yeast or vitamin therapy regarding the well-nigh universal danger of vitamin starvation were warranted, one might still question whether special "concentrated" or vitamin-rich medicaments were called for to remedy the situation. The tentative conclusions of the Council on Pharmacy and Chemistry of the American Medical Association, printed in detail elsewhere in this issue of *The Journal*, must appeal to every thinking physician. An extensive inquiry has led to the deduction that disease states attributable to lack of vitamin B (with which alone yeast and its derivatives are concerned) are certainly not widespread in this country. Surely no educated physician would be satisfied to identify the indiscriminate diagnoses of "lack of vigor," "run down condition," "lowered resistance" and similar generalizations with some obscure avitaminosis—a sort of latent beriberi or "specific anorexia." If medical diagnosis of obscure conditions is to be self-made in this fashion, the outlook for progress in the mastery over real disease is, indeed, dreary.

No one will deny the great contribution which the discovery of the vitamins has made to physiology and medical progress. It shares with the current conceptions of food energy in adding helpful ideas to the science of nutrition both in health and in disease. There is no reason, however, to seek calories in tablets. Why shall vitamin B be sought by every family on the druggist's shelves rather than in the garden or the grocery, the dairy or the meat market?

The crux of the present situation has already been referred to in these columns. The proof of a superiority of special vitamin B preparations in

all except a possible few conditions remains to be demonstrated. Even an enthusiast will be forced to admit, with the Council's report, that yeast or yeast-vitamin therapy has at present nothing more than an experimental status, except perhaps in a few not easily definable conditions for which yeast has been traditionally recommended without finding any considerable acceptance. Self-medication or take-a-chance medication even with a harmless product is not always a harmless performance. There is danger in deception. Real therapy is based on correct diagnosis. We must never deceive ourselves by an ardent desire for therapeutic panaceas.—*Jour. A. M. A.*, April 15, 1922.

PHYSICIANS IN GERMANY AND IN THE UNITED STATES.

Statistics showing the supply of physicians in other countries are interesting since they permit a comparison with the number in the United States. In the Berlin letter published last week, the number of physicians in Germany in 1921 is given as 36,186 for a total population of 60,412,084, or one physician to every 1,670 people. There is, therefore, proportionately a larger number of physicians in Germany than before the war. Since the close of the World War, anxiety has been expressed there because students in increasing numbers have been entering the medical schools, which indicates a further overcrowding of the profession. If there are good reasons for anxiety on this score in Germany, what about the United States? The figures for 1920 show that this country had one physician for every 726 people—more than twice as many as Germany, in proportion to the population. Another interesting fact is brought out in the letter, viz., that the forty-four largest cities of Germany, with only 25 per cent of the population, have 44.2 per cent of all physicians. Similarly in the United States the seventy-seven largest cities, which have 25 per cent of the population, have only 36.5 per cent of all physicians. In Germany, therefore, the tendency of physicians to locate in the larger cities is even more pronounced than it is in the United States.—*Jour. A. M. A.*, April 1, 1922.

PLEA FOR EARLY RECOGNITION OF UROLOGIC CONDITIONS.

P. A. Jacobs, Cleveland (*Journal A. M. A.*, May 6, 1922), states that valuable information is obtained in urologic cases from a careful examination of the patient, combined with a careful examination of the urine. He cautions that one should not treat every case of pyuria or hematuria, either with or without urinary disturbances, with drugs and bladder irrigations indefinitely. Pus in the urine, blood in the urine and disturbances in the function of micturition are definite signs of a pathologic condition of the urinary tract that demand serious consideration. Cystitis, so-called, is a symptom of some pathologic condition of the urinary tract and not a distinct entity. By applying modern urologic diagnostic methods, a correct diagnosis can be made with a reasonable degree of certainty. Then, and then only, can this class of cases be treated along proper lines.

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 N. Y. C. Children Hospital, Randal Island.
 Ellis Jones.....Sapulpa
 C. E. Kahle.....Drumright
 Henry W. King.....Bristow
 J. B. Lampton.....Sapulpa
 R. E. LeLatherock.....Drumright
 P. K. Lewis.....Sapulpa
 W. P. Longmire.....Sapulpa
 W. A. Martin.....Sapulpa
 J. M. Mattenlee.....Sapulpa
 J. S. McAllister.....Sapulpa
 G. L. McCallum.....Sapulpa
 Wm. J. Neal.....Drumright
 J. W. Phillips.....Oilton
 G. N. Powell.....Drumright
 J. T. Price.....Shamrock
 C. B. Reese.....Sapulpa
 S. W. Reynolds.....Drumright
 E. W. Reynolds.....Bristow
 W. P. Robinson.....Sapulpa
 Paul Sanger.....Drumright
 Chas. T. Schrader.....Bristow
 B. C. Schwab.....Sapulpa
 W. F. Snorgrass.....Bristow
 Mount V. Stanley.....Bristow
 O. W. Starr.....Drumright
 Roy M. Sweeney.....Sapulpa
 Leon Izgur.....New York, N. Y.
 Z. G. Taylor.....Mounds
 John M. Wells.....Bristow
 Geo. S. Wetzel.....Sapulpa
 J. Clay Williams.....Slick

CUSTER COUNTY

W. I. Basinger.....Butler
 T. A. Boyd.....Weatherford
 C. L. Brundage.....Thomas
 T. J. Butler.....Shiprock, New Mex.
 San Juan Indian Agency.
 T. T. Clohessy.....Buckeye, Ariz.
 M. C. Comer.....Clinton
 E. E. Darnell.....Clinton
 J. T. Frizzell.....Butler
 J. Matt Gordon.....Weatherford
 V. M. Gore.....Clinton
 K. D. Gossom.....Custer
 A. J. Jeter.....Clinton
 Ellis Lamb.....Clinton
 C. H. McBurney.....Clinton
 O. H. Parker.....Custer
 W. W. Parker.....Thomas
 McLain Rogers.....Clinton
 J. J. Williams.....Weatherford
 O. W. Wright.....Putman

DEWEY COUNTY

Frank W. Allen.....Leedy
 Coolen Seiling.....Leedy
 W. E. Seba.....Leedy

ELLIS COUNTY

W. J. Bamber.....Arnett
 J. P. Beam.....Arnett
 E. M. Dance.....Fargo
 G. E. Irvin.....Gage
 Kate M. Kerr.....Gage
 O. C. Newman.....Shattuck
 J. W. Rollo.....Shattuck
 C. T. White.....Tonkawa

GARFIELD COUNTY

A. Anderson.....Kremlin
 J. W. Baker.....Enid
 B. T. Bitting.....Enid
 Lee W. Cotton.....Enid
 Frank P. Davis.....Enid
 Julian Feild.....Enid
 M. A. Fletcher.....Hunter
 J. W. Francisco.....Enid
 Glenn Francisco.....Enid
 Geo. G. Harris.....Lahoma
 J. H. Hays.....Enid
 T. B. Hinson.....Enid
 F. A. Hudson.....Enid
 R. F. Johnson.....Enid
 W. G. Keibler.....Enid
 M. A. Kelso.....Enid
 S. A. Looper.....Houston, Tex.
 449 Kress Bldg.
 J. E. Mahoney.....Enid
 E. Margo.....Covington
 S. N. Mayberry.....Enid
 S. H. McEvoy.....Enid
 A. L. McInnis.....Enid
 W. B. Newell.....Enid
 A. S. Piper.....Enid
 W. H. Rhodes.....Enid
 D. D. Roberts.....Enid
 F. P. Robinson.....Hillsdale
 P. A. Smithe.....Enid
 Roy D. Stone.....Covington
 H. T. Vandever.....Enid
 J. C. Waldrop.....Hot Springs, Ark.
 J. R. Walker.....Enid

A. E. Wilkins.....	Covington
E. J. Wolff.....	Waukomis

GARVIN COUNTY

R. L. Baker.....	Wynnewood
T. C. Branum.....	Pauls Valley
James R. Calloway.....	Pauls Valley
John R. Calloway.....	Pauls Valley
John L. Dorough.....	Maysville
Lewis Gaddy.....	Stratford
W. P. Greening.....	Pauls Valley
T. F. Gross.....	Lindsay
G. L. Johnson.....	Pauls Valley
W. P. Johnson.....	Lindsay
A. P. Keever.....	Lindsay
N. H. Lindsay.....	Pauls Valley
J. K. Lindsay.....	Elmore City
E. H. Lain.....	Lindsay
H. P. Markham.....	Pauls Valley
J. C. Matheney.....	Lindsey
C. P. Mitchell.....	Lindsey
E. L. Morton.....	Hennepin
E. E. Norwell.....	Wynnewood
Benj. W. Ralston.....	Lindsey
M. E. Robberson.....	Wynnewood
W. E. Settles.....	Wynnewood
A. S. Spangler.....	Pauls Valley
Jas. W. Stevens.....	Pauls Valley
E. Sullivan.....	Oklahoma City
816 Tradesman Nat. Bank Bldg.	
C. L. Sullivan.....	Elmore City
W. C. Thaggard.....	Antioch
J. W. Tucker.....	Lindsay
H. P. Wilson.....	Wynnewood

GRADY COUNTY

J. C. Ambrister.....	Chickasha
H. C. Antle.....	Chickasha
W. R. Barry.....	Alex
W. J. Baze.....	Chickasha
Martha J. Bledsoe.....	Chickasha
W. L. Bonnell.....	Chickasha
U. C. Boon.....	Chickasha
W. H. Cook.....	Chickasha
C. P. Cox.....	Ninnekah
D. S. Downey.....	Chickasha
L. E. Emanuel.....	Chickasha
F. M. Garnes.....	Verden
G. R. Gerad.....	Ninnekah
P. J. Hampton.....	Rush Springs
A. E. Hennings.....	Tuttle
R. R. Hume.....	Minco
A. B. Leeds.....	Chickasha
W. H. Livermore.....	Chickasha
S. O. Marrs.....	Chickasha
H. C. Masters.....	Minco
G. M. McVey.....	Verden
A. W. Nunnery.....	Chickasha
J. T. Renegar.....	Tuttle
A. C. White.....	Chickasha
L. H. Winborn.....	Tuttle
C. E. Putman.....	Suttle

GRANT COUNTY

Chas. A. Brake.....	Medford
I. V. Hardy.....	Medford
J. T. Martin.....	Deer Creek
B. W. Saffold.....	Gibbon
J. Marshall Tucker.....	Nash

GREER COUNTY

C. W. Austin.....	Mangum
G. F. Border.....	Mangum

G. T. Bray.....	Reed
G. P. Cherry.....	Mangum
W. O. Dodson.....	Willow
H. W. Finley.....	Vinson
J. B. Hollis.....	Mangum
O. R. Jeter.....	Brinkman
J. B. Lansden.....	Granite
E. W. Mabry.....	Mangum
F. H. McGregor.....	Mangum
J. S. Meredith.....	Duke
Ney Neel.....	Mangum
T. J. Nunnery.....	Granite
L. E. Pearson.....	Mangum
C. C. Shaw.....	Brinkman
G. A. Waters.....	Granite

HARMON COUNTY

C. C. Collins.....	Hollis
W. S. Hopkins.....	Hollis
W. G. Husband.....	Hollis
J. S. McFadden.....	Hollis
J. E. Jones.....	Hollis
R. L. Pendergraft.....	Hollis
*W. C. Pendergraft.....	Hollis
W. T. Ray.....	Gould
J. W. Scarborough.....	Gould
O. J. Street.....	Louis

HASKELL COUNTY

R. M. Counterman.....	Stigler
W. R. Cowan.....	McCurtain
John Davis.....	Stigler
F. A. Fannin.....	Stigler
A. T. Hill.....	Stigler
E. Johnson.....	Kinta
O. H. Jones.....	Kanima
T. B. Mayfield.....	Mountain View
J. W. McDonald.....	Hoyt
R. F. Terrell.....	Stigler
T. B. Turner.....	Stigler
M. Van Matre.....	Keota
J. C. Rumley.....	Tamaha
J. R. Waltrip.....	Kinta

HUGHES COUNTY

W. B. Bentley.....	Calvin
D. Y. McCary.....	Holdenville
Henry A. Howell.....	Holdenville

JACKSON COUNTY

E. A. Abernathy.....	Altus
R. F. Brown.....	Altus
E. S. Crow.....	Olustee
R. H. Fox.....	Altus
D. L. Garrett.....	Altus
T. H. Hardin.....	Elmer
J. B. Hix.....	Altus
J. A. Humphrey.....	Martha
J. T. Lowe.....	Blair
L. H. McConnell.....	Altus
J. R. Reid.....	Altus
W. P. Rudell.....	Altus
W. E. Sanderson.....	Altus
C. G. Spears.....	Altus
J. S. Stults.....	Olustee
H. R. Taylor.....	Eldorado

JEFFERSON COUNTY

W. T. Andreskowski.....	Ryan
T. E. Ashinhurst.....	Waurika
W. M. Browning.....	Waurika
D. B. Collins.....	Waurika
A. G. Cranfill.....	Grady

J. I. Deer	Waurika	E. B. Hibbetts	Cold Springs
F. M. Edwards	Ringling	J. A. Land	Lone Wolf
C. F. House	Hastings	H. C. Lloyd	Hobart
A. R. Lewis	Oklahoma City	F. F. Martin	Roosevelt
C. M. Maupin	Waurika	Wm. McIlwain	Lone Wolf
J. M. Stephens	Hastings	E. P. Miles	Hobart
L. B. Sutherland	Ringling	W. W. Miller	Gotebo
L. L. Wade	Ryan	J. H. Moore	Hobart
J. W. Watson	Ryan	J. A. Muller	Snyder
		E. R. Poer	Hobart
		J. M. Ritter	Roosevelt
		DePaul R. Siberts	Roosevelt
		V. A. Voyles	Gotebo
		F. E. Walker	Lone Wolf
		B. H. Watkins	Whipple Barracks, Ariz.
		J. D. Winter	Hobart

JOHNSTON COUNTY

Guy Clark	Milburn
A. S. Crocker	Oklahoma City
J. T. Looney	Tishomingo

KAY COUNTY

C. W. Arrendell	Ponca City
C. J. Parker	Kaw City
H. S. Browne	Ponca City
P. A. Edwards	Nardin
A. P. Gerheart	Wichita, Kans.
R. B. Gibson	Ponca City
H. O. Gowy	Newkirk
J. C. Hawkins	Blackwell
A. R. Havens	Blackwell
A. L. Hazen	Newkirk
J. A. Jones	Tonkaka
W. M. Leslie	Blackwell
W. A. Lockwood	Ponca City
Allen Lowrey	Blackwell
W. N. McClurkin	Ponca City
S. S. McCullough	Braman
Thos. McElroy	Ponca City
D. W. Miller	Blackwell
G. H. Nieman	Ponca City
C. E. Northcutt	Ponca City
A. S. Nuckols	Ponca City
E. J. Orvis	Blackwell
J. A. Pryor	Dilworth
A. S. Risser	Blackwell
W. A. T. Robertson	Ponca City
H. C. Schenck	Newkirk
H. M. Stricklin	Tonkawa
A. C. Syfert	Blackwell
L. C. Vance	Ponca City
E. E. Waggoner	Tonkawa
J. C. Wagner	Ponca City
*Deceased.	
I. D. Walker	Blackwell
J. W. Werner	Newkirk
J. B. Widney	Kaw City
V. A. Wood	Blackwell

KINGFISHER COUNTY

E. R. Cavett	Loyal
C. O. Gose	Hennessey
Chas. W. Fisk	Kingfisher
A. O. Meredith	Kingfisher
J. A. Overstreet	Kingfisher
John W. Pendleton	Kingfisher
Newton Rector	Hennessey
Frank Scott	Kingfisher
B. I. Townsend	Hennessey

KIOWA COUNTY

A. Barkley	Gotebo
J. M. Bonham	Hobart
C. E. Bradley	Mt. View
J. R. Bryce	Snyder
A. T. Dobson	Hobart
A. H. Hathaway	Mt. View
J. T. Hamilton	Snyder

LATIMER COUNTY

A. C. Byars	Wilburton
E. L. Evins	Red Oak
T. L. Henry	Wilburton
G. A. Kilpatrick	Wilburton
C. F. Loy	Wilburton
F. F. McArthur	Wilburton
J. F. McArthur	Red Oak
R. L. Rich	Red Oak

LEFLORE COUNTY

S. D. Bevill	Poteau
C. B. Billingsley	Cowlington
Geo. R. Booth	Leflore
E. A. Campbell	Heavener
N. W. Campbell	Poteau
E. L. Collins	Panama
I. C. Dean	Poteau
W. M. Duff	Braden
E. N. Fair	Hodgens
W. C. Gilliam	Spiro
I. T. Harbour	Cowlington
J. J. Hardy	Poteau
H. Hardy	Poteau
A. G. Hunt	Bokoshe
C. B. Morrison	Curve, Tenn.
G. A. Morrison	Poteau
R. W. Minor	Williams
A. M. Mixon	Spiro
R. M. Shepard	Talihina
E. E. Shippey	Wister
J. B. Wear	Poteau
B. D. Woodson	Poteau
B. F. Vaughn	Stroud

LINCOLN COUNTY

F. B. Erwin	Wellston
P. F. Erwin	Wellston
J. O. Glenn	Stroud
R. H. Hannah	Prague
B. F. Vaughn	Stroud
A. M. Marshall	Chandler
C. M. Morgan	Chandler
Levi Murray	Wellston
U. E. Nickel	Davenport

LOGAN COUNTY

C. B. Barker	Guthrie
Pauline Quillin Barker	Guthrie
E. O. Barker	Guthrie
A. G. T. Childers	Mulhall
C. F. Cotteral	Guthrie
L. A. Hahn	Guthrie
C. B. Hill	Guthrie
J. L. Houseworth	Guthrie

H. W. Larkin.....	Guthrie
J. L. Melvin.....	Guthrie
Wm. C. Miller.....	Guthrie
C. S. Petty.....	Guthrie
L. H. Ritzhaupt.....	Guthrie
J. E. Souter.....	Guthrie
D. Stephens.....	Guthrie
F. E. Trigg.....	Guthrie
A. A. West.....	Guthrie

LOVE COUNTY

D. Autrey.....	Marietta
W. V. Batson.....	Marietta
A. C. Beeler.....	Marietta

MAJOR COUNTY

J. V. Anderson.....	Fairview
B. F. Johnson.....	Fairview
Elsie L. Specht.....	Fairview

MARSHALL COUNTY

A. E. Ballard.....	Madill
M. D. Belt.....	Woodville
T. A. Blaylock.....	Madill
W. H. Ford.....	Kingston
J. I. Gaston.....	Madill
W. D. Haynie.....	Kingston
J. H. Holland.....	Madill
E. F. Lewis.....	Kingston
J. H. Logan.....	Lebanon
H. E. Rappolee.....	Madill
O. E. Welborn.....	Kingston

MAYES COUNTY

J. L. Adams.....	Pryor
W. C. Bryant.....	Choteau
J. E. Hollingsworth.....	Strang
John D. Leonard.....	Strang
B. L. Morrow.....	Salina
E. L. Pierce.....	Locust Grove
Carl Puckett.....	Pryor
Ivadel Rogers.....	Pryor
W. J. Whitaker.....	Pryor
L. C. White.....	Adair

McCLAIN COUNTY

J. E. Cockran.....	Byars
O. O. Dawson.....	Wayne
I. N. Kolb.....	Blanchard
W. C. McCurdy.....	Purcell
E. E. Nunnery.....	Washington
B. W. Slover.....	Blanchard
J. W. West.....	Purcell

McCURTAIN COUNTY

N. L. Barker.....	Broken Bow
E. Baylis.....	Idabel
A. W. Clarkson.....	Valliant
A. S. Graydon.....	Idabel
H. Hensley.....	Eagletown
L. H. Hill.....	Idabel
C. R. Huckaby.....	Valliant
W. B. McCaskill.....	Idabel
B. F. Moreland.....	Shults
W. A. Moreland.....	Idabel
J. T. Moreland.....	Idabel
J. M. Thompson.....	Broken Bow
R. H. Sherrill.....	Broken Bow
W. D. Taylor.....	Haworth
R. D. Williams.....	Idabel
N. D. Woods.....	Millerton

McINTOSH COUNTY

Dyton Bennett.....	Texanna
G. W. Graves.....	Hitchita
J. O. Irwin.....	Ashland
L. I. Jacobs.....	Vivian
N. P. Lee.....	Checotah
D. E. Little.....	Eufaula
J. H. McCulloch.....	Checotah
C. H. Morris.....	Checotah
B. F. Rushing.....	Hanna
J. N. Shaunty.....	Eufaula
F. L. Smith.....	Fame
W. A. Tolleson.....	Eufaula
B. J. Vance.....	Checotah
J. C. Watkins.....	Checotah
G. W. West.....	Eufaula
W. F. Womack.....	Checotah

MURRAY COUNTY

Paul V. Annadown.....	Sulphur
A. P. Brown.....	Davis
R. Dunn.....	Davis
J. C. Luster.....	Davis
A. V. Ponder.....	Sulphur
J. H. Simmons.....	Sulphur
George W. Slover.....	Sulphur
W. H. Williamson.....	Sulphur

MUSKOGEE COUNTY

H. T. Ballantine.....	Muskogee
W. D. Berry.....	Muskogee
J. L. Blakemore.....	Muskogee
Benj. Brown.....	Muskogee
S. N. Chatterjee.....	Muskogee
C. E. DeGroot.....	Muskogee
R. N. Donnell.....	Muskogee
K. M. Dwight.....	Muskogee
A. N. Earnest.....	Muskogee
A. W. Everly.....	Muskogee
Finis W. Ewing.....	Muskogee
R. C. Farris.....	Porum
F. B. Fite.....	Muskogee
W. P. Fite.....	Muskogee
W. E. Floyd.....	Muskogee
S. J. Fryer.....	Muskogee
C. M. Fullenwider.....	Muskogee
J. R. Graves.....	Boynton
A. W. Harris.....	Muskogee
J. G. Harris.....	Muskogee
T. A. Hartgraves.....	Muskogee
Ellen Hedrick.....	Muskogee
Chas. W. Heitzman.....	Muskogee
C. L. Hill.....	Haskell
R. N. Holcombe.....	Muskogee
J. I. Hollingsworth.....	Muskogee
O. E. Howell.....	Oktaha
W. R. Joblin.....	Porter
R. E. Jones.....	Braggs
E. S. Keith.....	Muskogee
F. S. King.....	Muskogee
O. C. Klass.....	Muskogee
John E. Lee.....	Haskell
S. W. Minor.....	Boynton
P. E. Mitchell.....	Wetumka
S. E. Mitchell.....	Muskogee
Milton Morrow.....	Muskogee
W. M. Nagle.....	Muskogee
Shade D. Neeley.....	Muskogee
P. P. Nesbitt.....	Muskogee
J. T. Nichols.....	Muskogee
J. G. Noble, U. S. P. H. S.....	Boise City, Idaho
I. B. Oldham.....	Muskogee
W. E. Pearce.....	Boynton
J. H. Plunkett.....	Porum

NOBLE COUNTY

NOWATA COUNTY

OKFUSKEE COUNTYOKLAHOMA COUNTY

* Deceased.

Ellis Moore	Oklahoma City	A. W. Coleman	Dewar
L. F. Moorman	Oklahoma City	L. D. Conn	Morris
J. Z. Mraz	Oklahoma City	W. H. Cooley	Okmulgee
R. L. Murdock	Oklahoma City	W. M. Cott	Okmulgee
M. H. Newman	Oklahoma City	A. H. Culp	Beggs
L. A. Newton	Oklahoma City	W. D. Dawson	Henryetta
Claude B. Norris	Oklahoma City	J. G. Edwards	Okmulgee
N. R. Nowlin	Oklahoma City	F. S. Etter	Beggs
D. D. Paulus	Oklahoma City	J. B. Ferguson	Okmulgee
Griden Penick	Oklahoma City	W. C. Griffith	Henryetta
J. R. Phelan	Oklahoma City	O. O. Hammond	Okmulgee
John S. Pine	Oklahoma City	F. B. Hicks	Wetumka
J. M. Postelle	Oklahoma City	C. A. Hicks	Wetumka
John A. Reck	Oklahoma City	F. H. Hollingsworth	Morris
Horace Reed	Oklahoma City	A. R. Holmes	Henryetta
Lea A. Riely	Oklahoma City	W. H. Horine	Henryetta
J. W. Riley	Oklahoma City	F. A. Howell	Okmulgee
John A. Roddy	Oklahoma City	A. G. Hughey	Dewar
M. M. Roland	Oklahoma City	T. J. Lynch	Okmulgee
J. B. Rolater	Oklahoma City	G. Y. McKinney	Henryetta
F. E. Rosenberger	Oklahoma City	J. A. Milroy	Okmulgee
W. W. Rucks	Oklahoma City	J. L. Miner	Beggs
R. E. Runkle	Oklahoma City	C. M. King	Okmulgee
L. M. Sackett	Oklahoma City	W. C. Mitchener	Okmulgee
W. T. Salmon	Oklahoma City	Richard Mooney	Henryetta
A. J. Sands	Oklahoma City	J. B. Neal	Beggs
J. Worth Gray	Oklahoma City	J. P. Nelson	Schulter
F. M. Sanger	Oklahoma City	F. L. Nelson	Okmulgee
Winnie Sanger	Oklahoma City	J. A. Oliphant	Preston
H. V. L. Sapper	Oklahoma City	W. B. Pigg	Okmulgee
Fred C. Sheets	Oklahoma City	J. H. Powell	Kusa
A. J. Slade	Oklahoma City	D. M. Randel	Okmulgee
J. B. Smith	Oklahoma City	H. O. Randel	Okmulgee
M. Smith	Oklahoma City	J. L. Riley	Okmulgee
A. L. Solomon	Oklahoma City	I. W. Robertson	Henryetta
L. J. Starry	Oklahoma City	J. C. Robinson	Henryetta
S. N. Stone	Edmond	E. D. Rodda	Okmulgee
M. E. Stout	Oklahoma City	F. E. Sadler	Henryetta
S. E. Strader	Oklahoma City	T. H. Shelton	Okmulgee
S. P. Strother	Oklahoma City	N. N. Simpson	Henryetta
E. S. Sullivan	Oklahoma City	W. W. Stark	Okmulgee
George R. Tabor	Oklahoma City	W. L. Stephenson	Henryetta
C. B. Taylor	Oklahoma City	G. E. Tabor	Morris
W. M. Taylor	Oklahoma City	L. B. Torrance	Okmulgee
H. Coulter Todd	Oklahoma City	W. C. Vernon	Okmulgee
E. L. Underwood	Oklahoma City	J. O. Wails	Morris
T. G. Wails	Oklahoma City	V. Wallace	Morris
W. J. Wallace	Oklahoma City	F. S. Watson	Okmulgee
Curt Von Wedel	Oklahoma City	R. L. Westover	Okmulgee
Eva Wells	Oklahoma City	C. C. Whittle	Henryetta
W. W. Wells	Oklahoma City	L. B. Windham	Okmulgee
A. K. West	Oklahoma City		
W. K. West	Oklahoma City		
L. M. Westfall	Oklahoma City		
A. W. White	Oklahoma City		
M. W. Wier	Oklahoma City		
A. A. Will	Oklahoma City		
H. M. Williams	Oklahoma City		
Ennis C. Wilson	Oklahoma City		
K. J. Wilson	Spencer		
Ira J. Wood	Jones City		
A. D. Young	Oklahoma City		

OKMULGEE COUNTY

Linn Alexander	Okmulgee
R. M. Alexander	Bryant
J. E. Bercau	Okmulgee
I. W. Bollinger	Henryetta
H. D. Boswell	Henryetta
Harry E. Breese	Henryetta
O. S. Burrow	Okmulgee
E. C. Byram	Okmulgee
M. D. Carnell	Okmulgee
*Deceased.	

OSAGE COUNTY

W. H. Aaron	Pawhuska
E. T. Alexander	Bigheart
W. W. Chase	Bigheart
T. J. Colley	Hominy
*K. L. Colley	Bigheart
F. R. First	Bigheart
J. J. Fraley	Hominy
G. W. Gose	Pawhuska
Thos. Govan	Pawhuska
C. H. Guild	Apperson
E. W. Hooper	Pawhuska
Geo. L. Langworthy	Wilson
C. K. Logan	Hominy
W. S. Mason	Apperson
Woodward Mitchell	Hominy
I. C. Morris	Shidler
Q. B. Neale	Pawhuska
D. A. Shoun	Fairfax
J. G. Shoun	Fairfax
Benj. Skinner	Pawhuska
C. C. Smith	Burbank

G. E. Stanbro	Pawhuska
H. L. Summers	Osage
G. I. Walker	Hominy
Roscoe Walker	Pawhuska
Divonis Warten	Pawhuska
Leonard C. Williams	Pawhuska
E. K. Witcher	Pawhuska

H. C. Manning	Cushing
J. A. Martin	Cushing
E. O. Martin	Signet
J. B. Murphy	Stillwater
J. H. Proffitt	Yale
P. M. Richardson	Cushing
C. E. Sexton	Stillwater
C. D. Simmons	Stillwater
L. P. White	Cushing

OTTAWA COUNTY

J. D. Bewley	Miami
R. F. Cannon	Miami
G. W. Colvert	Miami
D. L. Connell	Picher
A. M. Cooter	Miami
J. R. Dawson	Afton
M. M. DeArman	Miami
G. A. DeTar	Miami
T. J. Dodson	Picher
W. M. Dolan	Picher
J. B. Hampton	Commerce
R. H. Harper	Afton
J. C. Jacobs	Miami
E. A. Leisure	Afton
J. F. Leslie	Bernice
J. B. Lightfoot	Miami
E. D. Mabry	Hockerville
C. A. McLelland	Miami
Chas. McCullum	Quapaw
G. P. McNaughton	Miami
H. K. Miller	Fairland
I. Phillips	Picher
General Pinnell	Miami
W. A. Sibley	Cardin
F. W. Smith	Picher
Ira Smith	Commerce
W. B. Smith	Fairland
G. W. Taylor	Cardin
L. W. Troutt	Afton
G. O. Webb	Cardin
J. T. Wharton	Miami
M. P. Willis	Commerce
F. L. Wormington	Miami

PAWNEE COUNTY

W. E. Arnold	Jennings
C. W. Ballaine	Cleveland
C. E. Beitman	Skedee
J. P. Dyer	Jennings
J. R. Fleming	Keystone
F. T. Gastineau	Pawnee
D. J. Herrington	Terlton
C. R. McDonald	Jennings
G. H. Phillips	Mt. Pleasant, Mich
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E. T. Robinson	Cleveland
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C. H. Beach	Glencoe
I. A. Briggs	Stillwater
V. V. Butler	Yale
J. H. Cash	Stillwater
L. A. Cleverdon	Stillwater
Benj. Davis	Cushing
W. N. Davidson	Cushing
E. M. Harris	Cushing
R. W. Holbrook	Perkins
J. Walter Hough	Cushing
W. B. Hudson	Yale
Eli Hughes	Stillwater
D. F. Janeway	Stillwater

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V. H. Barton	McAlester
F. J. Baum	McAlester
J. J. Billington	Quinton
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A. D. Bunn	Savannah
H. N. Bussey	Pittsburg
A. E. Carlock	Hartshorne
T. S. Chapman	McAlester
James Edward Davis	McAlester
J. W. Echols	McAlester
P. Gardner	Haileyville
W. C. Graves	McAlester
L. E. Gee	Adamson
A. Griffith	McAlester
J. O. Grubbs	N. McAlester
W. P. Hailey	Haileyville
A. J. Harris	McAlester
J. M. Harris	Kiowa
Charles T. Harris	Kiowa
W. K. Hudson	Gowan
J. C. Johnston	McAlester
Geo. A. Kilpatrick	McAlester
L. C. Kuyrkendall	McAlester
W. P. Lewallen	Canadian
T. H. McCarley	McAlester
C. F. Loy	Wilburton
J. W. McClendon	McAlester
F. A. Miller	Hartshorne
J. A. Munn	McAlester
R. A. Munn	Kiowa
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H. D. Shankle	Hartshorne
Graham Street	McAlester
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S. P. Ross.....	Ada
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G. H. Applewhite.....	Shawnee
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W. C. Bradford.....	Shawnee
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G. R. Connally.....	Tribby
U. S. Cordell.....	McComb
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W. M. Gallaher.....	Shawnee
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J. E. Hughes.....	Shawnee
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J. W. Marshall.....	Shawnee
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A. C. McFarling.....	Shawnee
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W. D. Phillips.....	Maud
Blair Points.....	Luther
E. E. Rice.....	Shawnee
T. D. Rowland.....	Shawnee
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W. S. Cary.....	Rankin
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W. T. Huddlston.....	Konowa
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J. H. Perkins.....	Wewoka
M. M. Turlington.....	Seminole
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B. J. Plunkett.....	Duncan
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A. J. Weedn.....	Duncan
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B. C. Goldberg.....	Oklahoma City
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W. A. Fuqua.....	Grandfield
J. Angus Gillis.....	Frederick
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L. Atherton	Tulsa	Morris Lhevine	Tulsa
P. N. Atkins	Tulsa	C. P. Linn	Tulsa
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J. H. Barham	Tulsa	P. A. Mangan	Tulsa
D. A. Beard	Tulsa	Berthe Margolin	Tulsa
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J. Walter Beyer	Tulsa	N. W. Mayginnis	Tulsa
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W. A. Dean	Tulsa	A. W. Roth	Tulsa
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W. F. Dutton	Tulsa	L. R. Shearin	Tulsa
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R. A. Felt	Tulsa	D. O. Smith	Tulsa
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Geo. W. Flinn	Tulsa	Leon H. Stuart	Tulsa
Herman W. Ford	Tulsa	C. S. Summers	Tulsa
Onis Franklin	Broken Arrow	W. J. Trainor	Tulsa
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Chas. H. Haralson	Tulsa	H. P. Ward	Leonard
Bunn Harris	Jenks	L. G. Washington	Tulsa
G. E. Hartshorn	Tulsa	Frank L. Watkins	Tulsa
Thos. M. Haskins	Tulsa	J. E. Webb	Tulsa
		P. C. White	Tulsa

D. W. White.....	Tulsa
A. Ray Wiley.....	Tulsa
C. Z. Wiley.....	Tulsa
F. M. Wilks.....	Bixby
Edwin B. Wilson.....	Tulsa
Chas. J. Wood.....	Tulsa

C. K. Tillison.....	Ramona
J. P. Torrey.....	Bartlesville
H. C. Weber.....	Bartlesville
C. J. Wells.....	Bartlesville
G. F. Woodring.....	Bartlesville
M. C. Wyatt.....	Bartlesville

WAGONER COUNTY

Isabel Cobb.....	Wagoner
Geo. R. Gordon.....	Wagoner
C. E. Hayward.....	Wagoner
G. W. Jobe.....	Wagoner
Georgi: S. Orvis.....	Wagoner

WASHITA COUNTY

B. W. Baker.....	Cloudchief
A. H. Bungardt.....	Cordell
C. Doler.....	Sentinel
J. E. Farber.....	Cordell
I. S. Freeman.....	Rocky
J. H. Harms.....	Cordell
J. W. Kerley.....	Cordell
A. S. Neal.....	Cordell
E. F. Stephen.....	Foss
A. M. Sherburne.....	Cordell
A. A. Stoll.....	Foss
C. M. Tracy.....	Sentinel
D. W. Bennett.....	Sentinel

WASHINGTON COUNTY

J. V. Athey.....	Bartlesville
S. J. Bradfield.....	Bartlesville
Elizabeth Chamberlin.....	Bartlesville
H. G. Crawford.....	Dewey
T. O. Crawford.....	Dewey
Geo. V. Dorsheimer.....	Dewey
J. C. Dunn.....	Bartlesville
J. T. Gunter.....	Ochelata
O. I. Greene.....	Bartlesville
L. D. Hudson.....	Dewey
W. H. Kingman.....	Bartlesville
J. D. Kiser.....	Bartlesville
W. A. Lynott.....	Bartlesville
Ned D. Miller.....	Bartlesville
A. North.....	Bartlesville
S. M. Parks.....	Olathe, Kans.
W. E. Rammel.....	Bartlesville
Mary E. Ray.....	Bartlesville
W. H. Shipman.....	Bartlesville
J. G. Smith.....	Bartlesville
O. S. Sommerville.....	Bartlesville
B. F. Staver.....	Bartlesville
F. R. Sutton.....	Bartlesville

WOODS COUNTY

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George N. Bilby.....	Alva
James A. Bowling.....	Alva
Walter S. Cherry.....	Alva
Ebenezer P. Clapper.....	Waynoka
Don Boy Ensor.....	Hopeton
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William E. Simon.....	Alva
William H. Smedley.....	Conway, Mo.
Oscar E. Templin.....	Alva
Sylvester H. Welch.....	Dacoma

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Chas. E. Davis.....	Woodward
T. E. Dixon.....	Mooreland
R. L. Edmonds.....	Vici
C. J. Forney.....	Woodward
John W. Green.....	Mutual
R. H. Hawkins.....	Quinlan
C. E. Houser.....	Vici
T. C. Leachman.....	Woodward
C. O. Lively.....	Tryon
E. M. Miller.....	Buffalo
E. W. Newport.....	Seiling
J. L. Patterson.....	Woodward
F. L. Patterson.....	Woodward
O. A. Pierson.....	Woodward
W. L. Rose.....	Woodward
H. E. Stecher.....	Supply
P. H. Stultz.....	Supply
C. W. Tedrowe.....	Woodward
T. D. Triplett.....	Mooreland
Hardin Walker.....	Rosston
D. D. Watts.....	Laverne
R. A. Workman.....	Woodward
J. M. Workman.....	Woodward

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*Names of offices for 1922 will be added to above as they are reported for the year.

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VOLUME XV

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NUMBER 6

Rat-Bite

With Unusual Complications and Fatal Termination, in Infant
Three Months of Age*

T. C. SANDERS, M. D.,
Shawnee, Oklahoma.

In the past when we have thought of rats as an etiologic factor in diseases of the human, our minds would doubtless first associate them with plague, in which the rodent plays the chief role through the agency of the flea.

Recently Dr. Edward Francis of the U. S. P. H. S., has described in the Journal of the A. M. A. a new disease of man, transmitted to the human from rodents by the bite of blood-sucking insects, viz., certain species of flies, bed-bugs, and lice—it sometimes occurs in laboratory workers and others who dissect infected rodents. He calls this disease Tularemia, due to "Bacterium Tularense," in which in about forty-eight hours after bite, the patient has pain, swelling and inflammation of the lymph glands draining bitten area, together with fever of a septic type and great prostration; the glands frequently suppurating, the fever lasting from three to six weeks, followed by a very slow convalescence, making in all a very disabling illness and occasionally a fatal one.

M. J. Rosenau in his text book upon "Preventive Medicine" describes a relapsing febrile disease caused by the bite of a rat—under the heading of "Rat Bite Fever," due to "streptothrix muris Ratti," isolated by Scottmuller in 1914, or to a spirochete described by Japanese investigators, in which the wound heals rapidly, but after a few days to a month, the wound becomes inflamed and painful, lymphangitis and adenitis set in, and with these

symptoms an associated systemic infection—coming on with a chill and a rapid rise in temperature; the patient also having a generally distributed characteristic exanthemata of bluish red sharply margined macules. He estimated that about ten per cent of these cases terminated fatally, most in the acute stage, but some later from nephritis or exhaustion.

My reasons for reporting the following case are: first, it is the only case of its kind I have had in my limited experience, and secondly, it seems to differ in many respects from similar cases in literature I have been fortunate enough to see; hence, I felt it might be of interest to report same in this Section.

Baby C—Male, age three months, born at full term, normal delivery, being first child of a healthy, robust couple, father 37, mother 20, baby breast fed only, and had pursued a normal, healthy and steady growth, except being slightly inclined to constipation, until present illness. The baby, while sleeping in bed with grandmother upon night of March 28, 1920, was bitten by a large sized rat (which grandmother saw) upon the forehead, about one inch above right eye. Wound bled freely at time of bite and baby cried a good deal; the mother and grandmother cleansing and dressing wound, but continued to worry about it the following morning, when I was called to inspect same—at which time several teeth marks were yet plainly evident, the baby otherwise normal in every way, being bright and playful. Upon the next day I was again called to see the baby, finding him acutely ill, temperature 103, abdo-

*Read in Section on Pediatrics and Obstetrics, 30th Annual Meeting, Oklahoma City, May 10, 1922.

men distended, extremities cool, stools this date after purgation foul smelling, of greenish color and showing many curds, baby continued to have a mild diarrhoea for several days thereafter, with eructations and more or less tympany, temperature persistent, and during this time patient kept legs and thighs flexed, also becoming quite hypersensitive, making outcry on any attempted movement or handling. The first consultant and I were of the opinion that the principal pathology lay in the intestinal tract with some associated meningeal irritation, since the wound site up to this time had shown no evidence of inflammation or infection, nor did it at any time during succeeding illness. However, baby continued ill, and a few days later much edema appeared in both the upper and lower extremities; urinalysis negative, except slight trace of albumen, fever up to present of remittent type, ranging from 99 to 104. Upon April 12, 1920, a decided Broncho-Pneumonia developed, seemingly more pronounced in right lung, respiration being labored, jerky and painful throughout remaining illness. About three days later, April 15, 1920, several non-inflammatory, rather hard, colorless nodules appeared, varying in size from hazelnut to hen egg; one over manubrium, one over each wrist anteriorly, and one or two small ones on each lower extremity above knee anteriorly; nodules remained non-inflammatory until the end, except the largest one over manubrium, which the day before death softened, taking on a bluish tint, and upon incising a large quantity of thin yellowish pus was expressed. For several days now I had come to believe the rat bite was playing a part, as had the second consultant, who saw the case with me several times during the latter part of illness, despite the fact there was never any inflammatory evidence in bitten area, but because of the persistent septic type of temperature, together with the peculiar nodules and one finally suppurating. The baby died upon the morning of April 22, 1920, after a desperate illness of over three weeks.

The features of case that particularly impressed me were the great variety of symptoms and complications, the digestive disturbance in the beginning with associated meningeal irritation, the septic type of temperature throughout, the peculiar nodules and their late appearance, and only one suppurating, and the entire absence at any time of infection or inflammation of wound site or adjacent glands, together

with edema and terminal pneumonia, all of which makes a different picture from any I have seen described.

My chief regret in the case is that I did not get a blood picture as well as cultures, but it so happened that our pathologist was away doing post-graduate work at the time; hence, my failure to obtain same.

DISCUSSION: *Dr. H. M. Williams, Oklahoma City.*

Dr. Sanders has presented a subject of unusual interest. The subject of rat-bite complications, is one that in the past is but little known of and little attention was paid to a bite from this rodent.

Of recent years there has been considerable research made in this line. Although principally through Japanese physicians, where rat bites were most common.

In 1908 a Japanese physician discovered the sporozoa muris in the blood and lymph of those infected with rat-bite and attempted, at that time, to classify and determine the case of rat-bite fever.

In 1914 Schottmueller found the streptothrix muris ratti which was later confirmed by Blake.

However, in their cases the principal anatomical findings were an acute ulcerate endocarditis affecting the mitral valve. The lymph glands and liver showed a moderate passive congestion. The gastrointestinal tract pancreas, bladder, adrenals and brain appeared normal in their findings, showing no pathological changes. Further investigations were made in 1916, which seems to be more satisfactory.

In 1916, Futaki, a Japanese, isolated the spirochoeta morsus muris which was confirmed by other Japanese physicians as being the direct cause of rat-bite fever.

In the case which the doctor presents to us today we find symptomology not altogether characteristic of that produced by this peculiar infection, according to these writers.

First, we note that the temperature began within twenty-four hours with no history of inflammatory process at the seat of infection. A continuous fever without the intermittent period which is characteristic of rat-bite fever. The case presented was one of continuous fever. The lymph nodules, the diarrhoea and the pneumonia condition could of been the results caused from a pyogenic infection.

The unfortunate side of the doctor's case was that he was not able, at that time, to have access to the laboratory.

We are told that in rat-bite fever we have a leukocytosis from 15,000 to 20,000 during the fever period, which lasts about three days time. Then drop back to normal blood count during the remission of fever, while in pyogenic infections this condition does not prevail. The child being so young a possible condition of both rat-bite fever and some other infectious organisms could have been present.

Dr. C. M. Pounders, Oklahoma City, Oklahoma:

Mr. Chairman—I just want to mention a case that I saw about a year ago and was similar in some respects to the one reported by Dr. Sanders. It was a child ten months of age, living in a tenement house. The parents left the child alone in its crib one night while they called on some neighbors. They were gone—as they said—about half an hour. On returning they found the child screaming violently as if from pain or fright and its head and face bloody. It was brought to the hospital the following morning where examination showed the exposed part of the head and face literally covered with bites—some deeper than others. There was hardly a surface of skin the size of a thumb nail that did not show a bite. There was one area on the scalp about one-half inch in diameter that was gnawed out almost to

the bone. The right hand, which was exposed, also showed numerous bites. No other parts of the child were exposed. The lesions had the appearance of rat bites. It was thought to have been attacked by a very vicious rat or by several at the same time.

At first the child seemed to be doing well except for the local injury. But in about thirty-six or forty-eight hours it developed a temperature which remained fairly constant around 103° and 104°. The leucocyte count arose to between 15,000 and 20,000 and remained there with a high polymorphonuclear count. The child appeared very toxic. Within two or three days it became jaundiced. This gradually increased and became quite marked. The general physical examination revealed nothing more than this. Blood cultures were negative and blood fragility tests were normal. The conditions grew progressively worse and the child died in a few days. Apparently from toxemia. Unfortunately an autopsy was not obtained and we never knew just what the condition was.

The case is one of unusual interest and the doctor has presented a most interesting clinical picture.

Bacteriological findings might of given us more light on the case. However, being the first paper, to my knowledge, on this subject, presented to our society, I am sure it will be cause for a more thorough investigation of this mode of infection.

Hiccough Due to *Bacillus Botulinus*

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Is hiccough a symptom or a disease? It is chronicled by textbook writers under the caption as a disease, yet it is defined as a symptom due to spasmodic contraction of the diaphragm. The efferent impressions are distributed through the vegetative system and phrenic nerve to the diaphragm, and through the laryngeal branches of the pneumogastric to the glottis.

Afferent routes of stimulation consist chiefly of the pneumogastric and secondarily of the sympathetic and certain cortico-bulbar fibres. The stomach is the starting point of 85 per cent of hiccough. Following this the intestines, peritoneum and female reproductive organs are the other abdominal points of stimuli. In the supra-

diaphragmatic region (thorax), cardiopericardial disturbances play an important role. The sympathetic is one of the afferent routes of stimulation to the phrenic nerve. It has been observed that the cortico-bulbar routes of stimulation are involved in psychoneurotic states (tic-hiccough), in hysteria (barking hiccough), and in meningitis.

Elsner (Monographic Medicine, Vol. vi) classifies hiccough as follows:

Hiccough with inflammatory diseases within the abdominal cavity is always suggestive of grave disease, and in some cases of intestinal stasis indicates complete obstruction.

With peritonitis and appendicitis it is equally serious, and is usually associated with marked distention and sepsis.

*With hernia—irreducible—*it suggests strangulation.

With hemorrhagic pancreatitis it is associated with other symptoms; often collapse.

With typhoid fever it is almost always serious; it may be a symptom of intestinal perforation, hemorrhage or deep toxemia.

When not dependent upon peritonitis or perforation, hiccough indicates virulent infection and may persist for several days, materially weakening the patient, though it is not necessarily fatal. Cessation of long continued hiccough is possible, and convalescence from typhoid followed in a number of my cases in which the recovery was scarcely expected.

Hiccough due to rapid eating, hot or cold drinks, acute and transitory gastrointestinal catarrh, acute indigestion, and obstinate constipation is easily controlled.

Hysterical hiccough, at times persists for several days, but is finally relieved by rest and treatment.

Toxemia associated with hiccough is usually deep and threatening.

Hiccough with the *deep coma or uremia, acidosis, alcoholism and arsenical poisoning and profound meningeal toxemia* is always a serious complication.

This condition sometimes becomes dangerous and death may ensue. Bertier and others assert that it is due to a sudden contraction of the diaphragm, causing a marked contractile motion of the abdominal and thoracic walls which is accompanied by a coarse and inarticulate sound from an insufficient opening of the glottis.

Hiccough may be preceded by aura, as epigastric tension. The diaphragmatic spasm is often so violent as to cause synchronous raising of the shoulders, trunk, and limbs, producing fatigue if the attack is prolonged.

In an ordinary case the spasms have a rate of 5 to 15 per minute, but in severe cases the rate may increase to 80 per minute. Hiccough as a rule stops during the

night, yet it may continue. In some cases there is much functional disturbance as labored respiration, cyanosis, difficulty in swallowing, and impairment of nutrition. There is record of hysterical cases lasting for twenty years.

The etiological factors in hiccough are numerous and varied, but it is the desire to discuss the subject from the viewpoint of infection. It is uncommon to observe the occurrence of some twenty or more cases of hiccough in a community at the same period.

In the fall of 1917, my attention was drawn to an unusual number of cases of hiccough in my practice. Fifteen cases developed in the short period of one week. On inquiry I found that Dr. N. W. Mayginnis had observed four cases, Dr. Brody three, and Dr. Trainor three. All these cases developed in a period of ten days, and were limited to one district.

Clinically these cases presented, chiefly, gastro-intestinal symptoms, but the nervous system was greatly involved. The gastro-intestinal derangements of epigastric distress, nausea, vomiting, sometimes diarrhoea and sometimes constipation with jaundice, dryness of throat and mouth, and choking attacks, with viscid secretion; and occasionally the nervous symptoms, as dimness of vision, mydriasis, diplopia, suffocating sensations and extreme weakness, were preceded by aura of gastric tension and hiccough. Temperature and pulse was normal, or, as in the greater number of cases, subnormal. Two cases were fatal; the others recovered slowly. The singular fact in these cases was that the hiccough continued practically during the entire period of the illness.

Investigation revealed that those affected had eaten a popular brand of sausage. This in every case was followed within 24 to 48 hours with the above symptoms. In my cases the intoxication was found to be due to the *B. botulinus*. The others I did not have an opportunity to observe so closely, but from history obtained would infer that they were due to the same cause.

Since 1917, I have had an opportunity to study a number of these cases. The clinical evidence in all these cases, after elimination and deduction, convince me that this endemic of hiccough was due to the *B. botulinus*.

Some Facts Concerning Human Parasites in Oklahoma

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The field of medical zoology is an important one and is practically unknown in this state. We are situated geographically so that we are generally classed with the Southern States. Consequently, we have a parasite fauna which is largely that of the south but including the fauna of the north as well. Therefore, we have a particularly rich field in which to work in connection with parasitic diseases.

The importance of diseases due to animal parasites is not as generally appreciated as it should be. This is principally due to the fact that these diseases and their parasites are not thoroughly understood. Many of these forms are inadequately described or are insufficiently discussed in medical literature so that the busy practitioner does not have access to them. There are comparatively few specialists in this field of work in America and for that reason many of our physicians are not thoroughly familiar with parasitic conditions. European physicians are more familiar, as a rule, with these diseases than are the medical men of our country. Another condition which prevails here as elsewhere, is, that where there is lack of accurate information there is much inaccurate belief, among others, a belief in the infrequency and harmlessness of parasitic infection. One factor which favors this condition of affairs is the difficulty in many cases with which parasitic infestation may be detected from its lack of clinical symptoms. Diagnoses can often be made only through the examination of feces, urine, blood and sputum, or even the examination of the flesh, as in the case of infections with trichinæ or certain bladder worms. Mistaken diagnoses are not infrequently made where worms are involved, as shown by Moore (1922). Many times the patient or his family is responsible, in a large part, for this error. The public generally expects the physician to make a definite diagnosis as soon as he sees the patient, or

at any rate during the first visit. Many persons will not yield to a thorough examination and very often, in such cases, parasitic infestations cannot be readily detected.

Our efforts in the field of parasitology and medical zoology are meeting with much encouragement from the fact that there is a very definite growing interest. Not only are the medical and scientific men interested in this field of work but the public is also eager to learn and to know something of it. The close relationship between the parasites of our domesticated animals and man is a subject which should deserve our attention. The unusually large part which parasites play in the field of tropical medicine has compelled our physicians and veterinarians to devote some time and thought to this branch of zoology. We are devoting much effort to campaigns, in the Southern States and in our island possessions, toward the stamping out of malaria and yellow fever, and also to the problems of hookworm eradication. Federal and State funds are provided for combatting diseases causing losses among our domesticated animals, but comparatively little in the way of such aid has been given to combat diseases of man. Let us look toward the education of the public in these matters so that we can crystalize public opinion and demand action.

In discussing the parasites of man in this state, one is seriously handicapped from the lack of available records of parasitism. Dr. Wann Langston of the State University Hospital, and Dr. John A. Roddy, of St. Anthony's Hospital, both of Oklahoma City, have very kindly consented to let me use their records of parasitic infections which have come under their observation. Thanks are due these gentlemen for this kindness. On account of a lack of records we should not only comment on the few actual reports that we have but must also consider the possible forms that we might reasonably expect to find here. These are taken up according to groups and are considered from that point of view.

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PROTOZOA.

The parasitic protozoa which are commonly found here are of great importance. A lack of records compels us to touch upon this group only very briefly. *Entamoeba (pyorrhalis) gingivalis*, an organism which is probably pathogenic, is more or less commonly associated with certain types of pyorrhea. *Entamoeba histolytica*, the cause of amoebic dysentery, has been reported (verbal) to the writer. Dr. Roddy reports two cases from St. Anthony's and Dr. Langston records several cases from the University Hospital. *Entamoeba coli* has also been frequently reported. *Endolimax nana* has not as yet been recorded definitely from this state. Undoubtedly it occurs here, especially since the close of the war. Kofoid, Kornhauser, and Plate (1919) report that in 1200 overseas troops of the United States Army, including men from every state in the Union, 27% were infested with *Entamoeba coli* 27% with *Endolimax nana*, and 10% with *Entamoeba (histolytica) dysenteriae*. On the other hand, of 300 home service men the percentages of infestation with these three *Amoebae* were 20%, 30% and 3%, respectively. From the foregoing it is evident that infections of this nature are much more common than we anticipate.

Other intestinal protozoa are among the flagellates and ciliates. Of the former we undoubtedly have *Giardia (Lambia) intestinalis* present here. Kofoid and his associates found this species in 5% of the 1200 overseas troops, and in 6% of 300 home service men. Dr. Roddy of St. Anthony's Hospital, reports four cases of *Cercomonas (sp)* infection during 1921. Among other intestinal flagellates the following should be mentioned, *Trichomonas intestinalis*, *Waskia intestinalis* and *Chilomastix mesnili*.

The only ciliate that we have attacking man is *Balantidium coli*. Dr. Langston reports a case from the University Hospital. This form is very common in hogs in some localities and it is undoubtedly more common in man than most of us realize.

Certain vegetable organisms such as *Blastocystis hominis* and *Iodamoeba butschlii*, molds and yeasts, are often confused with certain amoeboid forms. Kofoid and associates report the former in 30 to 33% and the latter in 10 to 14% of service men examined.

The blood-inhabiting protozoa of man of this part of the United States are limited

practically to the malarial organisms. Sapinoso (1922), of St. Anthony's Hospital, records 12 cases of malaria from the clinical records of 2767 consecutive admissions to the hospital. Of these *Plasmodium vivax*, causing the tertian type, and *P. falciparum*, which causes aestivo-autumnal malaria were equal in number. The records of malarial infection at the laboratory of the Oklahoma Agricultural and Mechanical College are of the tertian type. The quartan type, caused by *Plasmodium malariae* is also undoubtedly present here although the writer is aware of no written records. These are all transmitted by *Anopheles* mosquitoes.

A word might be said at this point on the technic and differentiation of the various species of protozoa infesting man. The methods ordinarily used could not be discussed without going into the matter at great length. Those interested may refer to Hegner and Cort (1921), "Diagnosis of Protozoa and Worms Parasitic in Man," published by the School of Hygiene and Public Health, of Johns Hopkins University.

TREMATODES.

In the group of trematodes, or flukes, we have no records of their occurrence in man in this state. However, we have *Fasciola hepatica*, the liver fluke of sheep and cattle, in certain sections which has been recorded as a human parasite from other countries. These forms have a complicated life history and are probably transmitted through contaminated water or through uncooked vegetables, such as watercress.

CESTODES (Tapeworms).

The tapeworms constitute a very important group of parasites for this section of our country. *Taenia saginata*, the beef-worm, and *T. solium*, the pork worm, are the two generally recognized and best known human tapeworms. Both are common here and have been reported a number of times. The larval stages, *Cysticercus bovis* of the beef-worm, and *Cysticercus cellulosae* of the pork-worm, have been found from several sections of the state by the writer. The latter species seems to be particularly common in the hogs from a number of localities. *Dipylidium caninum*, a common dog tapeworm, has been reported from man about 100 times, according to Ward (1916). Most of these concern children, some very immature. The above writer states that 34% of the cases

are in sucklings five weeks to six months; 42% in infants from seven months to three years; 10% in children from four to eight years, and only 13.5% in those over eight years of age. We have no record of its occurrence in children of this state, but most Oklahoma dogs harbour it. This worm is transmitted through the dog flea. In every case where this worm has occurred in children they have had dogs as companions and the children, probably accidentally, swallowed infested fleas.

Recently, *Hymenolepis nana* has been observed to become a very common tapeworm of man.

Hymenolepis nana, the dwarf tapeworm of man, and *H. murina*, the common rat tapeworm, are believed, by many parasitologists, to be identical. This tapeworm, 10 to 45 mm. in length and .5 mm. in breadth, may develop directly without passing a part of its life in an intermediate host. The eggs, when ingested by rats, develop into cysticercoids in the intestinal villi, from which they escape into the intestine and develop into adults. Goldman (1921) found a number of strands of mucus, voided after treatment with male-fern to remove *Hymenolepis nana*. Some of these strands contained from two to eight heads of *H. nana*, without any segmentation and each enclosed in a sac-like structure. Goldman regarded these as the larval stages of the dwarf tapeworm, thus indicating that man himself may act as the intermediate host. He also believed that autoinfection occurred from the fact that these worms were present in such large numbers (more than 1000 from a boy of five and several thousand from a girl of eight) and the difficulty experienced in getting completely rid of them. Goldman found seven out of eight children in a family infested. This fact also lends weight to the theory of direct infection as it is not likely that all of these members would swallow intermediate hosts of the parasites. Chandler (1922) found 22 cases of *Hymenolepis nana* in 1963 examinations of children of school age from northern Louisiana. Frey (1915) reported 32.6% of the inmates of the Texas State Orphans Home to be infested with this tapeworm. De Buys and Dwyer found 9.25% infestation among 595 children in seven different institutions in New Orleans. Chandler estimates that 1 to 2% of the children of the southern states are infested with this parasite. It is undoubtedly the most common tape-

worm of man in the south, and is no doubt more common in some localities than all other tapeworms combined. Apparently no cases have been recorded from Oklahoma but in all probability it may be found here.

Hymenolepis diminuta, 20 to 60 cm. long and 3 mm. broad, is a common tapeworm infesting rats and mice of this part of the country. This species also occurs occasionally in man. It is transmitted by the larvae of the meal moth (*Asopia farinalis*), the meal worm (*Tenebrio*), and has also been transmitted by rat fleas. Man undoubtedly becomes infested through accidentally swallowing the infested meal worms in such foods as prepared cereals, or dried fruits, which are eaten without further cooking.

Echinococcus polymorphus, or hydatid disease of hogs, cattle, sheep and man, is the larval stage of a dog tapeworm. The cyst may attain to the size of a child's head and the symptoms produced are according to the organ involved. We have no record of its occurrence here in man but during recent years, Virginia, Arkansas and Oklahoma have shown an alarming increase in the number of such cases in the meat-packing establishments. This prevalence of hydatids in domestic animals indicates the danger to which people are exposed. This fact of itself is sufficient argument for the suppression of the dog nuisance as a necessary measure for public welfare.

NEMATODES (Roundworms)

The group of nematode parasites is the most important as they are the most numerous and may affect almost any organ in the body. The ascarids are among the largest of the group and nearly every species of animal has its special variety. The human species, *Ascaris lumbricoides*, is now considered as identical with *A. suum* of the pig. Their development is direct and the eggs must be swallowed after a period of incubation. The adults ordinarily live in the small intestine but may migrate to the stomach or into the ducts of the liver. During larval stages, these worms often cause severe systemic disorders, especially of the lungs. It is known that some of the lung symptoms manifested along with the "worms" in children are due to the larval ascarids as they migrate to the lungs during a part of their life cycle. Mosler of Germany, and Lutz in South America (cited after Ransom, 1919), experimented on children and

an adult by giving *Ascaris* eggs. Both men observed systemic disturbances and severe bronchitis a few days after the eggs were swallowed. It is certain that in many cases of "thumps" in pigs larval ascarids are the causative factors. Ransom in a series of experiments on young pigs found that the mature eggs, when swallowed, hatch in the intestine and the larvae penetrate the intestinal wall, migrate to various organs and aided by the circulation, reach the lungs. Here they cause pulmonary troubles and, if sufficiently numerous, pneumonia follows. The larval worms leave the lungs by passing up the windpipe to the pharynx and are swallowed a second time. They are then carried to the intestine where they develop to maturity in about two months. Field investigations have shown that *Ascaris* pneumonia is the cause of much loss both of life and stunting of growth occurring in pigs. It is only reasonable to believe from the foregoing that these larval worms may be responsible for certain cases of bronchial disease of man, especially of children.

Hookworms, *Necator americanus*, are present in some localities in this state. The adult worms live in the small intestine and development is direct. The eggs hatch in the soil and the larvae enter man through the skin or by way of the mouth. Drs. Roddy and Langston report several cases from Oklahoma City hospitals. Cases have also been reported from other sections. The degree of hookworm infestation may be ascertained from the fact that Kofoid and Tucker (1921:79), in examining 23,659 men of the 36th Division at Camp Bowie, Texas, found 12.3% infested with hookworm. This division was made up chiefly of men from Oklahoma and Texas. At Camp Travis, the Oklahoma and Texas troops examined showed 10.1% infection. Of 8,686 Oklahomans having pneumonia, Kofoid and Tucker (1921:108) report 6.9% infested with hookworms. Undoubtedly these figures show a rather high percentage of infestation for the population as a whole, but nevertheless, when we consider the unsanitary conditions of some rural homes and communities we must reconcile ourselves to this situation.

Strongyloides stercoralis infections are reported by Drs. Roddy and Langston. The adult worms are about 2 mm. in length. Their eggs are usually produced in chains and hatch in the small intestine. The larvae pass from the body with the feces

and regain entrance through the skin or by way of the mouth, as in the case of the hookworm. Their distribution and symptoms coincide with those of hookworm but the degree of infestation is usually less.

Trichinella (Trichina) spiralis, the cause of trichinosis, is known to occur wherever man eats pork. *Trichuris trichiura*, the whipworm, is also cosmopolitan in its distribution. The pin-worm, *Enterobius (Oxyuris) vermicularis*, is comparatively common in children. The adult worms live in the region of the rectum, where the eggs, partly developed, are deposited. The time for the development of the eggs outside of the body is very short and transmission is direct. The larval forms live in the posterior part of the small intestine and may penetrate the appendix. Vuillemin (1892:360) recorded cases of pin-worms penetrating the intestinal mucosa and surrounding tissues for a distance of 2 cm. In some cases abscesses were formed. He also recorded cases of the possible migration of *Oxyuris*, in the female, through the genital organs and entering the peritoneal cavity, by way of the oviducts, and producing tuberculiform nodules. The fact that these worms penetrate the mucosa of the intestine and thereby introducing bacteria into the tissues is a matter worthy of consideration aside from the fact that they are harmful in other respects.

Kofoid and White (1919:3), in examining 2,621 men from Oklahoma, at Camp Travis, found 2.4% infested with the eggs of *Oxyuris incognita*. In none of these cases were they able to recover any worms. Riley (1919) reports finding *Syphacia obvelata*, a common mouse oxyurid, as a parasite of man.

Certain worms of ruminants which are very common in our domestic animals should be mentioned as they have been found infesting man. Among these are *Haemonchus contortus*, the sheep stomach worm, and four species of *Trichostrongylus*, to which Ransom (1916) calls our attention.

ARACHNIDS AND INSECTS.

In the group of arachnids we have several species of ticks which occasionally dwell upon human subjects. Among these are the dog tick, *Dermacentor variabilis*; spinose ear tick, *Ornithodoros megnini*, of cattle; Texas-fever tick, *Boophilus annulatus* of cattle and the lone star tick, *Amblyomma americanum*. Perhaps the most

dangerous tick we have is the wood tick, *Dermacentor venustus*. These ticks often produce a form of paralysis in man and animals and many cases of its occurrence are found in literature. Among recent writers on this topic are McCornack (1921), Hadwen (1912) and Todd (1914).

Insects of various kind attack man. Many species act as carriers for certain parasitic diseases, as malaria, yellow fever and forms of trypanosomiasis. Other species dwell upon the external parts of the body such as fleas and lice. Again some species, especially certain flies, are parasitic during the larval stage and produce a condition known as myiasis.

Myiasis is a term applied to the attack of living animals by fly larvae. The medical profession usually assigns specific names to infestations according to their location,—as dermal, nasal, auricular, intestinal, etc. Bishopp (1921) proposes another classification which is concerned with the method of attack and is divided into the following groups; *i. e.*, tissue destroying forms, sub-dermal migratory forms, larvae infesting the intestinal or urogenital tracts and forms infesting head passages.

Myiasis is caused by many species in several families. This condition in animals is not generally considered in connection with human cases. There exists, however, a close relationship; in fact, the prevention of myiasis in man is largely dependent upon the control of this condition in animals.

Careful determinations of the exact species causing myiasis is needed, both for the case at hand and for the benefit of science. For that reason it is highly desirable that the larvae causing the trouble be reared to adults, whenever possible, so that specific determination can be made. However, it is always wise to preserve some for record and future identification. Certain forms, of course, cannot be reared unless well matured before extraction.

TISSUE DESTROYING FORMS: In this state we have a great pest in the screw worm fly, *Chrysomya macellaria*. These flies normally develop in carrion, but occasionally attack live animals. In man, the nose and throat are most commonly affected, the cases occurring usually among individuals who suffer from chronic catarrh. Exposed minor wounds of the body may also be attacked. Other species of flesh flies and blow flies may attack living tissues and cause their destruction.

SUB-DERMAL MIGRATORY FORMS: The species concerned in this type of myiasis are truly parasitic. They comprise the group of bot-fly larvae and are of little consequence to man. The ox-warble fly or heel-fly of cattle has been recorded a number of times as attacking man, especially children. Dr. Glaser, who while studying ox-warbles in Germany, had a fly deposit an egg on his trousers which in due time hatched and the young larvae penetrated the skin of his leg. Later its presence was detected in the oesophageal region and was finally extracted at the base of the molar teeth. *Der-matobia hominis*, a bot-fly of domestic animals in South America, occurs frequently in man, producing dermal tumors and may cause serious results. It has been reported from the United States. Species of the horse bot-fly, *Gastrophilus*, have, according to Bishopp, caused dermal myiasis in man. The larvae of this species normally live in the stomach of the horse.

INTESTINAL AND UROGENITAL MYIASIS: Several species of flies may be responsible for producing myiasis of the intestines and urogenitals. Cases of intestinal myiasis due to species of *Eristalis*, or rat-tailed larvae, are comparatively common in this country. It appears that they sometimes give rise to acute colicky pains, but no serious symptoms. These larvae are commonly found in decaying vegetation and in water, and the source of infestation must be through the swallowing of uncooked and poorly cleaned food such as water-cress, celery and radishes, and the drinking of unclean water.

The cheese maggot, or skipper, *Piophilidae casei*, has occasionally been referred to as the cause of intestinal myiasis, often producing intense colic. It has also been recorded from the nose. No doubt these flies are often eaten in considerable numbers and the cases giving trouble are comparatively few. This fact is evident because these flies have the habit of depositing their eggs in cheese and smoked meat where they normally develop.

Larvae of the common house fly, *Musca domestica*, have been the cause of certain cases of myiasis and have been passed in the living condition, preceded by pain. Most of these cases have been in infants and the larvae no doubt gained entrance through the anus. The lesser house flies and latrine flies, species of *Fannia*, have been recorded as the cause of serious gastric disorders, resulting in abdominal pains, nausea, and vomiting, and some-

times vertigo, headache, and bloody diarrhoea. Sarcophagids may deposit maggots on excrement immediately after passage and may cause alarm.

Infestations of the urogenitals with various species of fly larvae is well known. The latrine flies are the principal offenders in this respect. They seem particularly attracted by human excrement, and especially urine. The house flies are similarly attracted. This habit predisposes to infestations of the genitalia. Kollar has reported the occurrence of a large number of larvae of the common house fly in the vagina of a diseased woman. Chevrall (1909) records a number of cases of urogenital myiasis by several species of fly larvae. Leon (1921) reports cases of urethral myiasis in a male caused by the common house fly. Ezickson (1922) records a case of myiasis in a male urethra by unknown species of maggots. Many others could be cited but the above will suffice to show something of the uncommon occurrence of intestinal and urogenital myiasis.

MYIASIS OF THE HEAD PASSAGES: Species of flies causing myiasis of the head are confined entirely to animals and such infestations in man are entirely accidental. We have the sheep head maggot or sheep bot, *Oestrus ovis*, which deposits living larvae on the nose and these crawl up into the nostrils where they continue development. No records are available of its occurrence in man in this country, but from other countries we have reports of its frequent attacks upon the eyes, nose, mouth, and ears. European writers have also reported the occurrence of *Gastrophilus* larvae in the eye of man.

The foregoing remarks may give us some idea of the prevalence of parasitism in this part of the country. While all of these forms have not been definitely reported here we may reasonably suspect their presence at times as they may be imported. The tendency is toward an increase in parasitism as the environment becomes more contaminated with eggs and larval forms by being inhabited with various animals. Sanitary measures must be instituted to prevent the spread of parasitic diseases. This can only be carried out by educating the public on the importance of matters pertaining to health.

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DISCUSSION—*Dr. Gayfree Ellison*, Norman, Oklahoma.

This paper is of interest in that it is the first time the subject of medical zoology has been brought up in this society. It is a kind of preliminary survey of the prevalence and distribution of parasitic infestation in our state and its relation to public health. I believe the essayist has called our attention to a much neglected phase of medicine that deserves attention.

We have become so accustomed to looking for bacteria as the etiological, underlying cause of disease that we overlook the higher types of microparasites. Unfortunately the State Board of Health does not have a special department of epidemiology. The State Board of Agriculture has seen the wisdom of such a department, and have in Mr. Guberlet the first epidemiologist in Oklahoma, but for the domestic animals, not for the human race.

No adequate survey of the subject has been made. In 1914 one of the medical inspectors of the Indian service visited our state, making a hasty survey of hook-worm infestation among the government wards in the Indian Schools. He told me that more than 50% of the children had hook-worm disease. The essayist has also given you some figures indicating the prevalence of intestinal parasites among the drafted men of the 36th division.

About one-third of our state, the southeastern corner, is our hook-worm area—first because the settlers were mostly from the hook-worm infested parts of the south and second, because it is seldom cold enough in the winter to destroy the larvae in the soil. I am certain that a rather large proportion of the people in this area would, upon proper examination, be found infested.

Malaria is another common disease in Oklahoma and the malaria area is somewhat greater than the hook-worm area, but no survey and no systematic attempt has been made to eradicate this disease, which no doubt causes considerable suffering and great economic loss each year.

It is a well known fact that certain parasites that infest domestic animals are also found in the human body—and many times the animal is responsible for the disease in man.

I believe that the dog tapeworm is much more common in the human, especially children, than is usually suspected. One of the Oklahoma City physicians reported a case to me where he removed seven tapeworms of the *Dipylidium caninum* variety from one of his children.

Usually we consider the occurrence of *Ascaris lumbricoides* as a very harmless infestation and readily controlled. However, as pointed out, the larvae penetrate the intestinal mucosa in man and travel to the lungs, much the same way as hook-worm larvae, and the peculiar cough and sometimes pneumonia that occurs in children should at times lead one to suspect pulmonary involvement of *Ascaris lumbricoides*.

Another important point is that the *ascaris suum* is identical with the human *Ascaris (lumbricoides)* should put us on our guard in order to prevent the spread of the infestation from hogs to man.

A microscopical examination of the feces for ova and parasites should be made almost as a routine measure in all cases where the diagnosis is not clear cut. The examination is very simple. A department of epidemiology, with adequate funds to maintain, should be added to our State Board of Health Department, and would no doubt be provided by the Legislature if the demand would come from the medical profession. The Commissioner of Health alone cannot convince the Legislature.

Dr. J. A. Roddy, Oklahoma City:

We are indebted to Doctors Guberlet and Ellison for their presentation of a subject we perhaps do not consider sufficiently. As compared with other states Oklahoma is relatively free of diseases in man caused by animal-parasite infestations.

During the last seven years Saint Anthony's Hospital has had an admission rate of about 3,000 per year, from all parts of the state, all these patients have had a

blood examination on admission and when eosinophilia or anemia has been found, also whenever signs or symptoms have suggested the possibility of infestation, repeated examinations of feces were made. The figures submitted by Dr. Guberlet accurately express the average findings. During the time I was chief of the medical service, and later when in command of the Base Hospital at Fort Sill the feces of all patients admitted to the medical service were examined for parasites and the findings harmonized with those reported from Saint Anthony's Hospital.

I have never seen a case of trichinosis, only one case of myiasis, and only one case of tapeworm infestation, in Oklahoma.

We are fortunate in having such able instructors as Doctors Guberlet and Ellison teaching this subject in our universities; such teaching there will be more productive of good than philosophical presentations of the subject here. I would like to draw attention to the inadequacy of philosophical study to establish the true incidence of infestation. From the fact that we have rats and mice in abundance, Dr. Guberlet infers that we must have considerable human infestation from this source. We know plague is a rat-born disease, yet fortunately, we have no plague in Oklahoma.

There is a condition that was epidemic in Oklahoma City last autumn that I have never heard explained and I had hoped the subject would be dealt with in this paper. I refer to the occurrence of round vesicles, 1 to 3 c. m. in diameter occurring singly or in groups, principally on the face and hands, but also on other parts; vesicles that soon become pustules, coalesce, and persist with thick yellow crusting for weeks, resistant to all ordinary forms of treatment; a condition I believe due to some parasitic infestation.

Information on this subject will be of much value to the medical profession and I hope Dr. Guberlet may give us some information on it.

J. E. GUBERLET, *closing*:

I wish to thank you gentlemen for taking part in the discussion. In regard to the condition mentioned by Dr. Roddy, no cases of that nature in man have come under my observation. In some of the lower animals, especially in young poultry, we sometimes have a condition which apparently is similar to the one described. That is caused by a large number of "chippers" attacking in a limited area at one time. If the condition of which you speak is produced by parasites it might be of a similar nature.

Practical Obstetrics in the Home

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Invited Guest of Section on Pediatrics
and Obstetrics.

One of the most encouraging signs of the present time is the universal interest manifested in obstetrics. A few years ago it was impossible to convince women of the necessity of hospital care. Formerly only pathological cases were admitted and these were grouped according to the convenience of the hospital. Today prenatal clinics have been established in all the large cities with access to hospitals for at least the abnormal cases. There are very few hospitals that do not maintain a maternity department on a separate floor away from other branches of medicine. In many cities obstetrical hospitals are being established, so great is the demand of the younger generation for intelligent care.

This has been brought about through the education of the laity. It may be said that other factors have played a part; economic conditions, intense living, and better medical training. But the fact remains there is a general demand from the younger women that they must have health for themselves and their offspring as a reward for their pregnancy and labor.

There never was a time when the public was so eager to learn and when the obstetrician had better control of his patient than at the present. The demand for better obstetric care is so great in the cities that it is almost impossible to provide service for those women who are de-

manding hospital care. Statistics show that the maternal and infant morbidity and mortality have been greatly reduced in modern hospital service, but even with this there has been little improvement in statistics in the last twenty years.

When one considers that 90% of all women are confined at home, it is very evident that they are attended not by the specialist, but by the general practitioner. While most problems are solved by the men doing special work, it is a fact that the general practitioner meets the great problems and must solve them through his own resources. There is a tendency today for the young physician to go directly from school into his special work. In many hospitals it is impossible to get internships, except along special lines. This plan is wrong. Obstetrical problems are problems of judgment. Very often obstetric cases present medical complications and unless the physician has been well trained in general medicine he is at a loss to know the solution. Unfortunately hospital service does not always solve the problem. Judgment can be gained only by age, experience and study. We must advocate hospital work where there is a rotating service for at least the first year and further advocate general practice for five to ten years when special training should be taken. For that vast majority of doctors who really carry the message of medicine, especially obstetrics we have the greatest respect. No one knows the problems they meet and how well they are met unless he has done general work. Most problems are not settled by laboratory methods, but by keen medical intuition and ability. Denied consultation, he is compelled to do and act alone. It is here that the greatest skill is often manifested and unfortunately unappreciated by the laity. Having passed through such a period the writer believes that the most valuable man in medicine is the general practitioner who serves the public in every capacity of medicine and who has as a reward the satisfaction of helping mankind unheralded and unknown.

The problems are the same whether in the hospital or in the home. True, there are more conveniences and more intelligent assistants in hospital work, yet it will take but a short time to change this materially. In making this statement one must realize that ignorance, customs, superstitions, poverty and lack of equipment are great handicaps in any place, but systematic education will improve all these

conditions. Attempts at prenatal work are discouraging in the beginning, but a resourceful, sincere doctor will be surprised at the co-operation of a patient if he is persistent.

My next proposition may seem radical, but in my own practice it has been proved that cleanliness in the home may be as thorough as in the hospital. Finally, post-natal care, which is very important, depends upon the physician who must take neighborhood women and show them how to care for both mother and child. On these points hinge the success of obstetrics and the future health of mother and babe.

Let us take up these points separately:

PRE-NATAL CARE.

You are all familiar with the value of the general examination of the heart, lungs, urine, blood pressure, etc. But without doubt we are negligent as to the different anatomical types of women. Patients may be grouped into three obstetric risks—the herbivorous or heavy set, the carnivorous or slender, and the intermediate types. This grouping is essential when one considers the measurements of the pelvis, abdominal capacity, the relation of the baby to the pelvis, the size of the babe and the endurance of the patient. If one be familiar with pelvic measurements and the estimated size and position of the babe many tragedies will be avoided. True it is not possible to estimate accurately the size of the babe, but if the measurements advocated by McDonald and Ahlfeldt are followed, such estimates may be made so as to be practical.

McDonald measured from the symphysis to the highest point of the fundus with a tape and found when the babe measured 35 c. m. it should weigh when born $6\frac{1}{2}$ to 7 pounds and should be 50 c. m. long. When descent has taken place you must add 3 c. m. to account for engagement. Others have estimated that for the first $1\frac{1}{2}$ c. m. one pound should be added and for each 2 c. m. one pound should be added. The same is subtracted from any measurement under 35 c. m. Ahlfeldt measured between the same points with the pelvimeter and estimated that a babe at term should measure 27 c. m., from which 2 c. m. should be subtracted for the thickness of the abdominal wall. This result is multiplied by 2 ($27-2 \times 2$) which will give a babe 50 c. m. long weighing $6\frac{1}{2}$ to 7 pounds. Now with the knowledge of the pelvic measurements, the measurements of the average foetal head and the position of the babe,

one may arrive at such a practical working basis that obstetrics will become more interesting and satisfactory. If every pelvis is measured routinely and the estimated size of the babe is calculated in each case, few accidents will attend delivery. To be convinced of the relative correctness of your prenatal date it is desirable to measure and weigh the babe after delivery for comparison. By this procedure conditions in future cases may be anticipated that are impossible otherwise. Frequently women are unable to give the date of conception nor can the physician be positive from the history obtained. It is here that measurements relieve not only the mind of the patient but the physician may be more certain as to the prognosis. This plan also aids in the diagnosis of twins, since with a McDonald above 40 c. m. we can be reasonably certain of twins. We must agree that our greatest anxiety is from not knowing and our greatest pleasure experienced when we are certain or reasonably certain of any situation. Thus routine measurements will be a source of great pleasure and satisfaction to a physician in acquainting himself with conditions.

We have stated that one can be as clean in the home as in the hospital. Having done deliveries in the home for several years while doing general practice, the writer can assure you the plan he suggests is not only practical and inexpensive, but is greatly appreciated by the patient. In some cases instruction may be given to the patient beforehand, but in many cases one does not see the patient before delivery is near. This situation is unfortunate, but may be met with ease. The following plan is offered for your consideration:

A—MATERIALS.

All to be boiled from ten to fifteen minutes.

1½ dozen towels or cloths, torn the size of a towel.

1½ dozen towels or cloths, torn one-half above size.

2 pair of rubber gloves and such instruments and materials used in delivery.

2 wash pans or vessels for solutions. Lysol 2 to 5% or alcohol preferred. In this connection let me suggest it is a common but erroneous practice among many physicians to use bichloride solutions, attention is called to the fact that bichloride mixed with vaginal discharges forms an inert albuminate of mercury which has no value as an antiseptic.

B—BED.

1. Rubber sheeting or oil cloth over the mattress.
2. Several thickness of newspaper, preferably with cotton batton and a clean cloth to protect the sheet.

C—PATIENT—IF NEAR DELIVERY.

1. Place across the bed.
2. Put on stockings with non-sterile towels wrapped from knees to body, pinning at the stocking and outside of thigh.
3. Heavy towel or cloth across the abdomen with gown well up above the abdomen.
4. Clip or shave the vulva, wash well with soap and water and follow with a 2 to 5% Lysol solution. (Warm and cold sterile water in abundance.)
5. Boiled cloth or cotton over parts.

D—ROOM.

1. Near the bed and over the chairs or furniture papers are placed for protection.
2. Vessel at the edge of the bed to catch all debris.
3. Antiseptic solutions placed where they may be accessible.

E—PHYSICIAN.

When the bed, patient and room have been prepared as outlined above and delivery is near, the physician should:

1. Change to a white suit or apron.
2. Wash hands and arms with soap and water, then an antiseptic solution, preferably Lysol or alcohol.
3. Put on gloves.
4. Wring out boiled towels or cloths and place over the abdomen, thighs, under the hips, and over the rectum.

It is readily seen that this plan is simple and inexpensive. If there is to be any mechanical interference, tables may be obtained, if not, virtually any operation aside from Cesarean section may be done. The entire field of operation is covered with sterile material which makes it impossible to contaminate the glove covered hand. With the number of towels or cloths prepared it is possible to change the field as often as is necessary.

Doctors in general practice while seeing infections and contagious cases are often compelled to take care of maternity work. Circumstances make the situation seemingly unavoidable and while not without danger, the chances for infections are lessened if the physician will change clothing and use rubber gloves. In all cases he

should have a clean gown that will cover his clothing.

During the course of labor certain fundamental points should not be forgotten. It is important in long cases the patient be given small doses of morphine from time to time that she may not become exhausted. The foetal heart-beat should be taken often since this alone determines the condition of the babe. The foetal heart-beat under 110, above 160, or irregular, is cause for anxiety.

Now a word concerning examination. There seems to be a diversity of opinion as to rectal examination. It must be granted that rectal examinations are not satisfactory in all cases, but if honestly followed few vaginal examinations will be made. Patients should be examined lying on the side with a gloved hand, since it is not so likely to contaminate the perineum and vagina. Gloves used for rectal examination should be boiled after each delivery is completed, but need not be boiled again before using on another patient. In no case should gloves used in rectal examination be used for vaginal examination afterward. If care and gentleness are practiced there is less discomfort to the patient, it is easier for the physician and all information necessary can be obtained in the majority of cases. Then if we are to lower maternal infections it must be recognized that rectal examinations have contributed more to lessen these terrible conditions than any other factor aside from asepsis.

For the termination of labor, ether by the drop open method should be given. It lessens pain, relaxes the tissues, makes perineal repairs possible and is most grateful to the patient.

Concerning the third stage of labor, there is only one treatment, that is to support the uterus and wait. Many physicians wrongly place the hand on top of the fundus, pressing downward and backward, which procedure encourages hemorrhage. The proper method is to slide the hand behind the fundus, lifting it gently upward

and forward, supporting it in this position. This procedure will prevent hemorrhage in the majority of cases and will play a part in preventing shock or may prevent infection from lowered resistance of the patient.

POSTNATAL CARE.

This depends upon the class of nursing available, unless one is fortunate enough to have a trained nurse it is necessary to instruct the attendant concerning every procedure. In most cases it is better to demonstrate each point personally. The patient should be allowed to get out of bed after the uterus has disappeared into the hollow of the sacrum and the lochia has been free of red color for two days. Then the patient may resume her usual duties in keeping with her endurance.

The patient should report for pelvic examination the second, fourth and sixth months. In the early months retroversions may be remedied by instructing the patient to take the knee chest position. In patients with thin abdominal walls it is often possible to replace the uterus, it being held in position by a support for a short time. There are a few patients whose lax tissues will give an index of lowered resistance in which case rest, tonics and the knee chest position must be followed.

If immediate repairs have not been done at least six months should elapse before a secondary repair is recommended. Few cases show anything like normal tissues before this time, which makes repair either unsatisfactory or useless.

In conclusion, emphasis is placed upon prenatal care, the value of measurements, rectal examinations, cleanliness in delivery, and postnatal care. Also a warning is sounded against radical obstetric procedures that are advocated from time to time. We must remember that basic principles well applied make successful obstetrics, that masters of obstetrics may do many things well and successfully, but we should not forget our own limitations.

Etiology, Pathology, Prognosis and Treatment of Acne

CHARLES H. BALL, M. D.,
Tulsa, Oklahoma.

Hardly a day passes that I do not have patients come to my office with such statements as the following:

"Doctor, I have been going to Dr. So-and-So, who has been giving me lamp treatments for acne, paying him a large fee, and I am worse or no better than when I started."

Or the following:

"Doctor, I have paid Dr. So-and-So \$150.00 for a long series of vaccine injections for acne and am just as bad as when I began."

Far be it from me to imagine that I can in the scope of this paper bring about the millenium in the practice of medicine, but, after having been clinical instructor in dermatology in St. Louis University for ten years, I had opportunities of observing how much dermatology was absorbed by the average medical graduate; therefore can gauge his ability to handle skin eruptions or even diagnose them.

Is it any wonder that a large percentage of the population of Oklahoma follow after false gods, such as chiropractic, osteopathic, christian science, Rose Wonders, astronomical freaks, faith healers, etc.

Gentlemen, we must first put our own house in order before we can expect the support of the laity. The strength of a chain is always governed by its weakest link.

If you don't know what is the matter with your patient, or if he makes no progress under your treatment you should be honest enough with yourself and with him to say so, and not give the whole profession a black eye by bleeding him for every dollar that can be extracted from him, without benefiting him a particle. The practice of medicine is a dignified science, not a graft.

At the meeting of the A. M. A. in New Orleans last April the papers that elicited the most discussion and were listened to with the greatest interest were those on the subjects with which the doctor comes in daily contact most frequently. Probably a verification of the well-known motto:

"The world gives its admiration not to those who do what no one else attempts, but to those who do best what multitudes do well."

As acne is one of the most common diseases of the skin, occurring, as it does, usually on the face, therefore causing the young men and women (and the youngsters are the worst sufferers) untold embarrassment, shame and grief, it deserves to be placed practically at the head of the list, alike for study, discussion and attempted cure.

ETIOLOGY: At puberty, when the functional activity of the entire body is increased, the skin (which, by the way, is the largest individual structure of the whole body, covering, as it does, eighteen square feet) also participates, more especially one of the appendages of the same, namely, the sebaceous glands, which become enlarged, distended and filled with sebum. That is also the period when the mother quits scrubbing the face and neck of kids, as they think they have outgrown that, and the result is they do a poor job of it, the opening of the gland becomes filled with dirt, and thus we have the so called black-head. The accumulated and imprisoned sebaceous material first makes the papule and, being splendid culture media, eventually becomes a pustule, because of the invasion and proliferation within it of the acne bacillus and the staphylococcus albus, aureus and citreus. This pustule may be intra- or peri-glandular, may be in the epidermis, the cutis vera, or even invade the subcutaneous tissue. If the contents are not expressed we have sometimes the terribly disfiguring scars and pits seen in the face which are caused by a pressure necrosis; whereas, if they are opened with a sharp lance as soon as formed, no scars will result.

PATHOLOGY: The pathological sections all demonstrated a hyperkeratosis, atony and proliferation of the muscle fibers, the arrectores pili, sometimes the inflammation being limited to the gland, at others being periglandular, plasma (large fusi-

form) giant and mast cells present, and, when suppuration occurred, with leucocytes added. The lodgment for long periods of dirt in the gland openings had produced to a certain extent an atrophy of the muscle and a consequent permanent culture media for the development and proliferation of bacteria.

PROGNOSIS: With the modern methods of treatment at our command practically all cases of acne can be cured and the patient can be given this assurance with safety if he follows instructions implicitly.

TREATMENT.

1. Put the patient on a good, wholesome, well-balanced diet, free from all substances that may have an influence in disturbing the digestive tract.

2. Ascertain if there are any foci of infection anywhere in the body, teeth, tonsils, pneumatic sinuses of the face, kidneys, gall bladder, and in the case of women, the genital organs. These must all be corrected.

3. Intestinal putrefaction, due primarily to an excessive animal proteid diet, with the resultant indican excess present in the urine, may also be a provocative factor.

4. Syphilis should also be eliminated as an exciting or accessory cause.

5. The question of the use of vaccines should then be determined, either the stock or autogenous. My experience has been that in periglandular varieties of acne they are sometimes of value, but as a rule the benefits are more or less transitory.

6. The applications that have given me the best results are as follows: First advise the patient to scrub the face or other parts daily with a fairly stiff bristle brush, using hot water and the official *sapo viridis*. After this apply an ointment of salicylic acid and sulphur in cold cream, gauging the strength according to the age and complexion of the individual, increasing the strength of the ointment every seven days, because, of all the organs of the body, the skin adapts itself most quickly to medicines, and unless the strength is increased no result will be obtained. The following morning a lotion of calamin and zinc oxide, containing resorcin is applied.

Both systemic and local treatment of acne is essential. In acne occurring at adolescence, the local treatment is usually

the most important but constitutional treatment must not be overlooked and must be selected according to the predisposing influences in the individual, remembering that digestive disturbances and constipation should be corrected. The value of exercise in the open air and other hygienic measures are important. Chlorotic and anemic patients should receive treatment accordingly. Where there are definite, rational indications to be met with in the physical condition of the patients, constitutional treatment is of benefit, but, on the whole, the cure of acne depends upon local treatment.

The older dermatologists were rather radical in dieting and giving internal medication, persisting in much treatment when local treatment was all that was required. By local treatment we must have a method to cause exfoliation of the epidermis, diminish the over-activity of the sebaceous glands and prevent the formation of comedones, to sterilize the skin and to prevent suppuration. There is no drug therapy which meets all of the indications except to a certain degree. By the various medications great temporary improvement can be produced in acne, and in many cases satisfactory results can be obtained.

It is true, however, that in many cases the older methods fall far short of a permanent cure. It is these obstinate cases that have given the X-Rays their present place in the treatment of acne. The rationale of X-Ray therapy depends upon the fact that the activity of the sebaceous glands can be diminished, that the rays will produce exfoliation, prevent the formation of abscesses and comedones, and have a sterilizing effect upon the skin.

The amount of X-Ray treatment depends largely upon the type of acne which predominates, whether the small papular, the small pustular or the large pustular with deep abscess formations. Small papular and acne rosacea are much more resistant to X-Ray treatment than the pustular forms. This is explained by a study of the pathology. The character of the lesion is determined by the process of inflammation. If the process is around the outlet of the sebaceous glands, small papular acne is formed; when extensive and periglandular, the large indurated papular, and when suppuration occurs, the pustular form. In papular acne the inflammation is usually subacute and persistent, resulting in a dense infiltration of the

tissues, and the production of infiltrated papules often seen in stubborn cases. The process may result in hyperplasia of the connective tissues. The process of infiltration may be more acute and followed by suppuration. This may be limited to the sebaceous gland and produce neither scarring nor loss of hair, or it may include the follicle and surrounding tissues, causing destruction of the hair papilla and the production of a permanent scar. As a rule, both papular and pustular lesions exist, but one form usually predominates.

The X-Rays appear to act, in the treatment of acne, in two ways, viz: by causing atrophy of the sebaceous glands and by setting up an irritative desquamation. Most authorities agree that the principal effect is due to the action of the rays in arresting the secretion of the sebaceous glands. The result could bring about complete atrophy of the gland if the radiation be carried far enough. It can be readily understood, since the rays have a selective affinity for glandular tissues, it requires less radiation to decrease the activity of the sebaceous gland than to cause an absorption of the hypertrophic growth of connective tissue or the destruction of small vessels as in acne rosacea.

The successful treatment of acne by the X-Ray is dependent upon a flexible technique which can adapt the dosage to the needs of each case. It is the writer's belief that acne requires more experience and judgment to produce results than any skin disease treated by the X-Rays.

Acne rosacea while more resistant, has yielded the best results by the X-Rays alone where the glandular inflammation predominates. In my experience, it takes more treatments, and it is usually necessary after the glandular inflammation has subsided and a large amount of the hypertrophic tissue has been absorbed to destroy the vessel by electrolysis. This is tedious and should never be done until all the X-Ray reaction has disappeared. The end results in the cases the writer has treated have been satisfactory and so gratifying to the patient that the time and trouble are fully justified in all cases of acne rosacea. Electrolysis alone, before the abnormal glandular tissue has been absorbed by the X-Rays, would be unsuccessful.

In conclusion, acne is an entirely remediable disease in every case when properly managed. By the X-Rays and other adjuvants, when used with discretion, nearly

every case of acne of the most severe type can be cured. It is to be remembered that acne at adolescence is due to the overactivity of the sebaceous glands, followed by an infection of the glands, and that until the secretion of these glands is reduced to normal and until the infection is destroyed, there will be recurrences. This takes time, and the treatment should be given in series, first, because this is the only safe procedure to reduce the sebaceous glands to normal, and secondly, because the pus infection will be destroyed before spreading to adjacent tissue. In pustular acne the rays seem to have an action on pyogenic foci by rendering the soil inert. Every dermatologist of experience should know that medication has very little effect on the overactive sebaceous glands, and how resistant a pustular infection is to ordinary treatment. Today, in the hands of one experienced there is no more danger in treating acne by the X-Ray than in prescribing local medication.

A portion of the above has been abstracted from the splendid article by Russell H. Boggs, M. D., Pittsburgh, Pennsylvania, in the Urologic and Cutaneous Review.

PROCEEDINGS OF STAFF MEETING AND CLINICAL SOCIETY OF ST. ANTHONY'S HOSPITAL.

DEATH REPORTS. May 15, 1922.

Mrs. I. S. Age 56. Dr. J. W. RILEY.

This patient has been troubled with upper right abdominal pain for several years. She had been examined previous to her entrance to the hospital and a diagnosis of gall stones had been made some years ago. Operation was postponed or refused at that time.

The patient's tonsils were removed April 17, 1918. In July, 1918, she was operated on at St. Anthony's Hospital, when a vaginal celiotomy and perineorrhaphy were done, a cyst of the left ovary being removed from the vagina. She recovered promptly from this operation. Although I do not remember of a microscopic study being made of the cyst, it appeared from the microscopic examination to be just a simple ovarian cyst, and this was carried out, in a way, by the absence of any evidence of tumor formation in the cul de sac at the time of autopsy.

At the time of the third operation, or the gall bladder operation, January 16, 1922, we were very much surprised when we

opened the abdomen and found a mass, hard and nodule, about the size of the palm of your hand, in the liver in the region of the transverse fissure. There were many adhesions in the transverse fissure and around the gall bladder. A nodule was taken from the anterior surface of the liver at this time and was sent to the laboratory. Subsequent report on the specimen showed it to be non-cancerous. The clinical diagnosis, at this time, however, was cancer of the liver, probably from a primary lesion of the gall bladder. The stomach, duodenum and pancreas, as far as could be ascertained at this time, were negative. Enlarged glands could be felt along the gastrohepatic omentum, well up into the liver and retroperitoneally. The abdomen was closed without drainage.

The patient made a smooth recovery, as far as the incision was concerned, and left the hospital in a week. She was somewhat relieved of her pain for two weeks and then the same pain returned. She was not advised as to her condition and always was somewhat puzzled to know why she was not relieved of pain, which was mostly controlled by phenacetin, aspirin, benzyl benzoate mixture, and an occasional one-half grain of opium until two or three days before her death, when a hypodermic of one-sixth grain morphine was given. The patient's appetite continued good all during her illness, and she was able to go from her bed-room until a few days before her death, when she found that she was short of breath and so covered with perspiration that it was evident that the heart was being over-taxed by this exertion, and she did not attempt it after that.

The pain in this case must have been very severe, for she said she was never free from pain and it was referred to the back, between the shoulder blades and to the epigastrium. The final clinical picture was that of a gradually failing heart—rapid pulse, low blood pressure, marked cyanosis and edema of the lungs.

At the autopsy the liver was found riddled with carcinomatous growths, and the gall bladder was buried deep in the abdomen and in the transverse fissure of the liver, and it consisted of two compartments, in the lower of which two gall stones were found. These gall stones were large enough to make it impossible for them to have entered the ducts. The patient never showed any jaundice during her last illness. The surface of the gall bladder was covered with papillomatous

growth, which probably were malignant in type and were the primary seat of the hepatic cancer. Cancer metastasis was found only in the liver, gall bladder and lymph nodes of the abdomen.

Another important feature in regard to the case is that the clinical diagnosis at the time of the operation was carcinoma of the liver, probably originating in the gall bladder, and was non-operable, while the pathological report of the nodule excised from the liver, which represented in a way, a good specimen of the pathology, showed it to be non-malignant. The specimen was reported as an inflammatory condition. This confirms the opinion that we should not depend entirely on one test or report in regard to final conclusions of a case; that the pathologist is as liable to error as the clinician.

Final Diagnosis: Cancer of the gall bladder, with metastasis of the liver and abdominal lymph glands. Chr. myocarditis and chronic endocarditis, with verrucous vegetation on the mitral valve.

In regard to the verrucous vegetation, which were moderately hard and calcified: I have examined this heart many times and have never heard any evidence of a valvular lesion. It seems almost impossible to believe that a vegetative growth as large as presented here could have existed on the leaflets of the mitral valve and not produce an abnormal murmur. Patient died April 8, 1922.

Mrs. P. P. Age 25.

DRS. ALLEN AND
H. M. HOWARD.

Patient delivered normally. Convalescent for six days post-partum. On March 27, 1922, she had a severe abdominal pain with nausea and vomiting. Pain particularly in the right side. Patient very fat and hard to examine.

I saw her in consultation on March 28, 1922, with three other doctors. She then had a blood count of 19,200 polys 90%. She presented a typical picture of acute appendicitis with possible rupture. She was operated in the afternoon of the same day, and the appendix found was inflamed along with the other pelvic and abdominal structures. She had a general peritonitis, the origin of which was probably the puerperium. The appendix was pathological, but not sufficiently so to account for the trouble. Patient died April 3, 1922. Cause of Death—Gen. Peritonitis.

Baby H.

DR. LOONEY.

Baby delivered April 8, 1922, at 12:18 p. m. R. O. P. presentation high forceps delivery, very difficult under anaesthesia. Had considerable difficulty in getting child to breathe. After twenty minutes resuscitation patient lived and was able to take nourishment and nurse at the breast. She showed some paralysis of the facial muscles. Some lack of movement on part of the left side. About 24 hours later child began to twitch right hand and have spastic paralysis. About three or four hours later began having convulsions. She died April 9, 1922, at 6:45 p. m.

Cause of death:: Cerebral Hemorrhage from Trauma due to difficult labor and forceps delivery. No post mortem obtained.

Mrs. S. Age 58—Married DR. LAMOTTE.

Patient entered Hospital March 21, 1922, complaining of pain in right wrist and small joints of right hand. Present illness began three weeks ago with pain in right knee, not swollen or red, but tender to pressure. After four days, the left shoulder became involved the same way, then after four days the right wrist and fingers. Before entering the Hospital patient has been on Sodium Salicylate medication with no relief. Past history irrelevant with exception of an attack at age of 18 which was diagnosed acute articular rheumatism and which cleared up entirely on sodium salicylate medication.

Examination shows corpulent adult female resting quietly in bed, in no pain. Temp. 100. Pulse 94. Resp. 24. Expression very dull. Skin negative. Head: external squint of right eye. Pupils contracted, teeth poorly cared for and carious. Tonsils atrophic. Neck negative. Chest: very thick walls. Lungs negative. Heart sounds distant, indistinct, and irregular. No murmurs heard. Abdomen—no tenderness. Very thick panniculus. Reflexes—pupillary very sluggish. K. K. less active in right than left. Otherwise negative. Extremities—the joints of the fingers of the right hand are possibly slightly swollen. Patient complaining of pain on movement of them or pressure. Holds left arm still because of pain in shoulder on motion. Otherwise negative.

There was a trace of albumen in the urine. W. B. C. 14,000, blood pressure 160--00. Impression: Myocarditis. Acute Infectious Arthritis. Chronic Nephritis.

Patient was put on a light diet, her hands immobilized and heat applied. She seemed to do well for several days, then she complained of intense pain in her joints and a nocturnal headache. A Wassermann was asked for and this was negative.

April 7, 1922 (17 days after admission), patient was feeling well in the morning. When her lunch was brought to her she propped herself up on her pillow and immediately had a sharp pain in her chest just to the left of the mid-sternal line. She lay down but couldn't get her breath. When I saw her (three or four minutes later), she was extremely cyanotic and dyspnoeic: breathing 60 per minute, very deep. Pulse could not be felt. She kept asking for more air and said her chest hurt. She did not respond to stimulation and died seventeen minutes after onset.

Cause of death:: Probably Thrombosis of the Coronary Artery.

Mr. C. Age 65.

DR. HOWARD.

Male patient age 65 entered Hospital April 17, 1922, because of a badly infected right leg, which had followed an injury incurred on April 10, 1922. He gave a history of high fever, chills, extreme pain in the leg since the fourteenth. The whole leg was markedly swollen and red. His respiration was rapid and he seemed to have a marked depression. His temperature was 102.3. Pulse 120.

W. B. C. 19,200 Polys 900%. Blood culture negative. The above symptoms continued. His skin became yellow twenty-four hours before his death on April 21, 1922. Cause of death: Septicaemia (Streptococcus Hemolyticus).

"IDEAL CHOLECYSTOTOMY."

Because of a history suggesting cholecystitis, or because of the accidental discovery of gallstones, A. Murat Willis, Richmond, Va. (Journal A. M. A., April 1, 1922), does not believe that the patient should be subjected either to the chance of an accentuation of his discomfort or to a loss of a normal organ by an ill-advised operation. It has seemed to him that cholecystotomy, with the omission of drainage, is the ideal procedure in these cases. Three points are given especial mention: (1) the avoidance of unnecessary trauma to the gallbladder; (2) protection of the adjacent peritoneum from contact with the concentrated and, possibly, infected bile, and (3) tight closure.

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive the Journal should call for immediate notification of the editor, 508 Barnes Building, Muskogee, Okla.

Local news of possible interest to the medical profession, notes on removals, changes in address, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application. It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

EDITORIAL

THE CITIZENS MILITARY TRAINING CAMPS.

We append below resolutions recently adopted by the Bexar County (San Antonio, Texas) Medical Society, relative to the performance of a gratuitous service by the medical profession by the administration to candidates for the Training Camp Activities of prophylactic anti-typhoid vaccination. The service we are called to perform calls for such a modest amount of effort and time that the officers in charge of this Service may be assured in advance that, as a rule, the administration will be performed by the Oklahoma physician without charge to the Government or the man who is attempting to render on his part a free service for the possible future protection of his country.

Physicians interested should communicate directly with Dr. (Lieutenant Colonel) George Chase Lewis, Officer in Charge, Citizens Military Training Camp Activities, 8th Corps Area, Fort Sam Houston, Texas, and have him list their names as willing to co-operate in this work.

RESOLUTIONS ADOPTED BY BEXAR COUNTY MEDICAL SOCIETY, APRIL 13, 1922.

Whereas, the United States Government has tentatively announced the holding of the 1922 summer camps at El Paso, Denver, Fort Sill, and San Antonio, of the Citizens Military Training Camps, involving an estimated attendance of about 3,000 students for the period of July 27, to August 26, 1922, and the physical examination of several thousand applicants in April and May, and the administration of typhoid, para-typhoid prophylaxis and smallpox vaccination to about 3,500 tentatively accepted students and alternates in June and July for the Eighth Corps Area consisting of Texas, Oklahoma, Colorado, New Mexico and Arizona, and

Whereas, The project of the Citizens Military Training Camps is a highly patriotic and worthy cause, giving great benefit to the health, physical development, and mental alertness of the future manhood of the nation and is also a most important step in our national protection from foreign aggression at a minimum of expense to the taxpayer;

Therefore, be it resolved, That Bexar County Medical Society Endorses these Citizens Military Training Camps and recommends that its members tender their services to the Commanding General, Eighth Corps Area, Fort Sam Houston, Texas, for the purpose of making, without expense to the Government, such physical examinations of candidates for the 1922 Citizens Military Training Camps, as may be required by the War Department, and for the further purpose of administering the typhoid, paratyphoid prophylactic supplied by the Government for tentatively accepted students and alternates, or for the administration of smallpox vaccination supplied commercially by the candidate.

Be it further resolved, That a copy of these resolutions be furnished the Commanding General, Eighth Corps Area, for his information, and that copies be sent the Councilors of the State Medical Association and that report of this action be published in the Texas State Journal of Medicine.

THE ST. LOUIS MEETING, A. M. A.

More than 5,000 physicians registered as attendants at the St. Louis meeting, a number, well above the average.

The scientific sections covered an unusually wide range of subjects and the scientific exhibits were very attractive, drawing a large number of interested visitors and spectators, who, while on their visit at Moolah Temple for the purpose of registering, also took in the sights offered by the commercial exhibitors.

The House of Delegates was very active, taking a very decided stand and attitude upon some matters affecting the American profession. Among the matters considered by that body was the practice of the Veterans Bureau (Bureau War Risk Insurance) of placing beneficiaries of the government as students of Chiropractic. This practice came in for stinging criticism by unanimous adoption by the House of the following resolution, which had previously been introduced in and adopted by the St. Louis Medical Society by Dr. Robert E. Schleuter of St. Louis:

"WHEREAS, The St. Louis Medical Society on May 16, 1922, by memorial and resolutions vigorously protested against the approval by the U. S. Government of the School of Chiropractic as a means of vocational training for disabled ex-service men, and

WHEREAS, It appears that more than 250 ex-service men from all parts of the country, seventy of whom represented the Ninth District, composing the states of Missouri, Iowa, Kansas and Nebraska, are now enrolled in one Chiropractic School in this District, with the sanction and approval of the U. S. Government; therefore, be it

Resolved, That the House of Delegates of the American Medical Association, in annual session assembled, representing over 89,000 legally qualified physicians, adequately trained in the arts and sciences (the only foundation for the recognition, control and prevention of disease), approves the sentiment expressed in the memorial and resolutions adopted by the St. Louis Medical Society, which have been submitted to this House and hereby directs that the proper officers of the American Medical Association memorialize and petition the Federal government, particularly those officers charged with the responsibility for the rehabilitation of dis-

abled ex-service men, and to take such action in the interest of the welfare of all the people, and also for the protection of those who honestly desire to administer to the sick, to the end that the ex-soldiers seeking vocational training which will fit them for ministering to the sick and aiding in the recognition, control and prevention of disease, shall, at least, meet the requirements and shall receive such adequate training as is defined in the classification of medical schools of the American Medical Association known as Class A, or acceptable medical schools—a standard which is approved by all right-thinking people moved by a desire for public welfare."

Of great interest to the general profession, but not of so much interest to Oklahoma on account of local news, was the handling of the present liquor or alcoholic imbroglio into which the medical profession has been drawn without its desire, invitation or leave. Citing the present unsatisfactory plight of the profession by which the Volstead Act requires onerous regulations to be carried out by the physician, the House demanded by resolution "relief from the present unsatisfactory conditions, and recommends that provisions be made for supplying bonded whiskey for medicinal use only" by the Secretary of the Treasury.

The Sheppard-Towner fiasco also came in for a merited lambasting, the resolutions on that score calling the law "a product of political expediency;" "an imported socialistic scheme;" an act which "unjustly and inequitably taxes the people of some states for the benefit of the people of other states," and, finally as a class of legislation undesirable and to be disapproved by the American Association.

The House also went on record as favoring the increase in the personnel of the U. S. Public Health Service by 550 officers of various grades. All forms of "State Medicine" came in for the opposition of the Association. The tendency of the "half-baked" physician to make of himself overnight a "specialist" also came in for criticism, the consensus of opinion of the House being that those who proposed to enter the difficult field of specialism should spend several years in general practice before attempting that difficult role.

Dr. Jabez N. Jackson, Kansas City, certainly the apparent favorite, and holding the field up to the last moment as the most promising presidential candidate, to the

great regret of his many friends, was defeated for that office by the slim margin of five votes by Ray Lyman Wilbur, President of Sanford University, California.

All together the meeting was a tremendous success and St. Louis did itself proud as an entertaining city. The 1923 meeting will be held in San Francisco.

USELESS WASTE OF THE PHYSICIAN'S TIME AND ENERGY.

Once before this (Uniformity and Simplification of Insurance Blanks and Uniformity of Examiners, *THE JOURNAL*, Editorial, March, 1921, p. 68) we called attention to a phase of the physician's work, in which an enormous amount of waste and loss occurred due to duplication and repetition, a great part of which was productive of no good and could be eliminated without lessening the efficiency and value of the work in question. That such elimination and simplification would result in great saving in the aggregate is obvious upon a moments study of the matter.

Our latest cause of complaint arises over the custom of Oklahoma Insurance carriers, especially those holding policies for corporations jurisdictional to the State Industrial Commission. In actual practice the physician doing this class of work undergoes approximately the following experience: First, he attends the injured employe, rendering him such service as the case seems to demand and the medical ability employed produces. At the beginning or later the physician makes a report to the Industrial Commission in triplicate (if he is shrewd and systematic he slips an extra sheet of carbon in and makes for himself a duplicate of the report—sometimes this proves to be a very comforting piece or "scrap" of paper). He then renders his bill for the service, and then his irritation begins. After a variable length of time he receives a few formal lines containing a cross indexed, liberally hyeroglyphed, Chinese puzzle, denominated by the carrier as their "Form." "Fill it out and you get your money." He does, only to discover the next day that the blank does not fit any other company, each being a law and autoerat after its own ideas. The original blank he filled for the Industrial Commission is nothing if not an irritating, conglomerate mass of useless repetition. A short perusal of that form will demonstrate without question that from 10 to 12 questions may be eliminated without affecting the information sought, or

the same result may be attained by a slight change in the form in which the questions are asked. As an instance of the manner in which this may be accomplished, there are 10 questions in one portion of the blank beginning with "Is there evidence of Syphilis?" then "Alcoholism?" etc., etc. The entire list could be reduced without affecting the efficiency of the blank by altering the form to read "If there is any evidence of Syphilis, Alcoholism, Occupational Disease, etc., etc., explain in detail." The present form demands the name of the injured twice and in many particulars is so worded that proper preparation of the blank is impossible if the physician does not write into the blank spaces approximately six to eight-tenths unnecessary matter.

As a saving which may be accomplished with seemingly, the greatest ease, the suggestion seems justified that the Industrial Commission first reduce its own redundancies, then ask each company doing business in Oklahoma to co-operate in a further elimination of waste by adopting a common form, which form, in order to fulfill every demand necessary to the various companies, should be adopted only after due consideration by those interested.

This very great help to the busy physician may be accomplished with little or no waste and loss to those concerned. Its adoption will at once result in greatly lessening the work of the industrial surgeon, which in turn releases him for other and more important duties. We believe that a suggestion from our own Industrial Commission will have the prompt attention of the various carriers and if that is true the initiative rests with them.

THE PASSING OF WYETH.

The news of the death of Dr. John A. Wyeth, which occurred in New York City May 28th, was not unexpected to the many Oklahomans favored by intimate acquaintance with that great and good man. To many of us in Oklahoma Dr. Wyeth was more than a great surgeon, a great man, a pioneer and pace-maker in surgical endeavor, a leader in medical education whose impress is left on a civilization which acknowledges the advances made possible by his far-seeing and remarkable vision. Born in Alabama more than 77 years ago, Dr. Wyeth literally forced his way to a niche in the Hall of Fame not attained by many men. His career is of personal in-

terest to Oklahomans who recall his service to the "Lost Cause" as a private in Forrest's Cavalry, and in the troop commanded by Lieutenant-Colonel Dew M. Wisdom, afterward U. S. Indian Agent under President Cleveland at Muskogee. Colonel Wisdom was at his best as a raconteur when relating personal episodes in which Dr. Wyeth, then a mere boy, figured. That he was possessed of unusual personal courage, which was put to the severest tests, goes without saying. No one could serve under Forrest without undergoing excitement beyond belief. Instancing one of Wyeth's experiences, Colonel Wisdom relates that at the surrender of a large contingent of Confederates on the Tennessee River, Forrest, virtually commanded to surrender, became a volcano of rage, swearing at and threatening his superior, telling him he could surrender, but for himself and those of his men who so willed, they would cut out their way, and cut they did. Crossing the Tennessee River under direct fire, the great cavalry leader piloted his men safely through hostile lines, and, as is well known to those familiar with the history of the Confederacy, Forrest died without ever giving his opponents the satisfaction of his surrender. Serving with such a leader it is not any wonder that Wyeth, the historian and writer, as well as surgeon, afterward became the faithful depicter of his former leader and created a masterpiece, "The Life of Nathaniel Bedford Forrest," which work stands as one of the many monuments left by the Alabamian. He also produced "With Saber and Scalpel," a work autobiographic of the writer.

No episode is better illustrative of the character of Dr. Wyeth than that relating to his capture and months of prison confinement during the Civil War by the Federal forces. Wyeth had in the north some very prominent but distant relatives. Hearing of his plight they intervened to secure his release or at least amelioration of his condition. The final requirement and fatal stumbling block to their success was the demand as prerequisite to his release that Dr. Wyeth sign an oath of allegiance and promise not to again engage in the conflict against the Federal troops. He promptly rejected the offer. Later he was released by exchange and re-entered the Confederate Army.

Perhaps the greatest achievement of all those accomplished by Dr. Wyeth was his organization and building to a high plane of success the first postgraduate school of

medicine ever established in America, the New York Polyclinic, which still stands as a lasting monument to his energy and creative genius. The writer recalls Dr. Wyeth's satisfaction on being assured by some wealthy New Yorker that when needed he should have for his hospital a very fine ambulance, "a \$5,000.00 ambulance" was the way he expressed it. His great influence may be better appreciated when he was supplied *two* of the finest automobile ambulances then to be had. The same success attended his efforts toward the "New Polyclinic" (the old building located at 34th and 3rd Avenue was never considered more than a make-shift). Years before the actual erection of the handsome ten-story structure on 50th street Dr. Wyeth was busily planning ways and means, saying to the writer that he had the promise of sufficient funds to carry the work to such and such extent. As with the ambulances, he was able to anticipate his estimates and long before his fixed schedule was consummated he had the satisfaction of receiving aid to such great extent that the financial troubles of the Polyclinic, if any, were dissipated with the troubles of the past.

As a leader in the City of New York Dr. Wyeth perhaps had the greatest influence with the hundreds and thousands of men of ability who poured into the metropolis from the Southland. Hardly a man from the many states styled "Southern," but what felt honored by knowing Wyeth and their privilege in calling him "friend" was a privilege indeed. He was one of the leaders in what is known as the Southern Society of that city. As to positions of honor coveted by men of medicine, Dr. Wyeth during his years of activity was honored by each of them, attaining with ease the greatest gift of them all in the Presidency of the American Medical Association at St. Paul in 1901.

THE JOURNAL feels its inadequacy to say even a part of the words due this great man and friend of us all. In his passing the American profession and every physician who was privileged to call him friend feels that no mere words fittingly express the feelings arising on his death.

AN APOLOGY.

It is with regret that we have to apologize to the following members for leaving their names off the roster of members for 1922 which we ran in the May issue.

The May issue was the first run after THE JOURNAL underwent the recent change in printers. For 14 years one company has done the mechanical work of THE JOURNAL. With all the experience that company had in the work, more or less errors occurred in connection with the roster and lists of proper names, so it is not surprising at all that errors occurred in that issue. We ask your indulgence and will try to limit mistakes to the minimum hereafter.

J. A. Gregoire.....	Drumright
G. A. Boyle.....	Enid
W. L. Kendell.....	Enid
J. R. Swank.....	Enid
C. T. White.....	Shattuck
J. W. Adams.....	Chandler
I. C. Talley.....	Red Oak
A. E. Martin.....	Marietta
H. C. Bailey.....	Sulphur
T. D. Triplett.....	Woodward
A. J. Pope.....	Hanna
W. H. Powell.....	Sulphur
J. T. Slover.....	Sulphur
C. V. Rice.....	Muskogee
W. S. Martin.....	Asher
G. H. Butler.....	Tulsa
Chas. H. Ball.....	Tulsa
Ralph V. Smith.....	Tulsa
L. H. Murdock.....	Okeene
J. L. Austin.....	Durant
John A. Haynie.....	Durant
Jas. L. Shuler.....	Durant
Thomas J. Shimm.....	Wagoner
W. H. McBrayer.....	Haworth
N. S. Freeman.....	Leedy

RADIUM IN CANCER OF THE PROSTATE.

Hermon C. Bumpus, Jr., Rochester, Minn. (Journal A. M. A., May 6, 1922), reports at the Mayo Clinic 729 cases of cancer of the prostate have been treated with radium during the last seven years, and 363 have not been treated. In 297 cases, plates were made of the chest, spine or pelvis, and in eighty-four (28.28 per cent) metastasis was demonstrated, the greater number most commonly in the lumbar sacral region. Sixty-one of 218 roentgenograms of the spine and pelvis showed metastasis, and only eight of 169 roentgenograms of the chest showed metastasis. From the facts that 73 per cent of 113 patients with metastasis died during the ensuing year, and that the average length of life after examination was seven months, it does not seem justifiable to treat a patient with radium simply for the local effect obtained on the original growth. If patients with glandular metastasis alone are added to the 28 per cent of patients in whom metastasis is detected by the roentgen ray, it seems a conservative estimate that one-third of all patients with carcinoma of the prostate will be unfit subjects for radium treatment because of metastasis. Since only eight of the 217 patients treated with radium are alive after three years, it will be seen that the results are far from satisfactory. However, the average extension of life for one year as a result of the combined method of administration is significant, and demonstrates that by careful selection of cases and care in irradiating all portions of the gland, better results may be expected in the future.

Editorial Notes---Personal and General

Dr. C. A. Johnson, Wilson, has recovered from a serious attack of illness.

Drs. F. B. and W. P. Fite, Muskogee, are contemplating the erection of a private hospital in that city.

Dr. O. R. Gregg, Alva, has located in Pawhuska. Dr. Gregg has made Alva his home for many years.

Dr. J. N. Shaunty, Eufaula, is visiting in Denver and other Colorado points. He expects to remain all summer.

Dr. S. W. Reynolds, Drumright, successfully passed through the ordeal of an appendectomy at Oklahoma City in May.

Dr. A. J. Pope, Hanna, underwent an operation for appendicitis at Henryetta late in May. He made a nice recovery.

Dr. J. W. West, Purcell, who underwent a surgical operation for appendicitis at Oklahoma City in May made a nice recovery.

Dr. and Mrs. F. M. Adams, Vinita, visited Los Angeles in June. Dr. Adams goes as representative of the Vinita Rotary.

Dr. P. A. Smithe, Enid, mourns the loss of his 18-year-old son who died May 17th, after several months illness due to heart disease.

Dr. S. E. Mitchell, Muskogee, has moved into the offices of Dr. Forrest S. King, who will be absent on account of illness for some time.

Dr. J. P. Vansant, of Cherokee County, Georgia, has located in Dewey and is affiliated with the Washington County Medical Society.

Dr. H. G. Crawford, Dewey, has moved to Las Vegas, New Mexico, and has transferred his membership to San Miguel County Medical Society.

Dr. O. E. Templin, Alva, is recipient of especial commendation for services rendered the C. M. T. C. from the Commanding General of that Service.

Tillman County physicians attended a neurological clinic at Frederick under direction of Dr. A. D. Young, Oklahoma City, June 6th. Dr. D. L. Garrett, Altus, read a paper on "Some Practical Thoughts on Cystoscopy."

Dr. A. H. Culp, Beggs, has shied his castor into the political ring of Okmulgee County. Dr. Culp aspires as to the duty of Representative of his county on the Democratic ticket. It goes without contradiction that not only Okmulgee County, but the State at large would be fortunate in his selection for that duty.

Dr. F. L. Watson, McAlester, recently host to a burglar, has corrected the erroneous report published in this Journal as to the burglar getting away with "nothing." As the matter now stands the burglar did get something. We gladly make the correction of the error, wherein it was stated he got nothing. We were wrong, he got a first-class beating at the hands of the doughty physician.

Dr. T. R. Preston, Weleetka, spent the month of June in Chicago, mixing business with pleasure in a combination of seeing the sights and attending the clinics.

Dr. J. J. Matheny, Lindsay, who has spent several months in New Orleans doing special work in eye, ear, nose and throat, has returned to Oklahoma and will seek a location in this state.

Drs. Hinson and Boyle, Enid, announce the dissolution of their partnership. Dr. Hinson, according to press dispatches, purchasing the interest of Dr. Boyle in the Enid Springs Sanitarium.

Dr. Cary W. Townsend, Oklahoma City, is successor of Dr. Martin in more ways than one. Already he is recipient of advice via the news columns of the lurid sheet issued under the title **NEWS** as how best to handle the weed, and similar problems.

Dr. Forrest S. Etter, Beggs, is in Baltimore at John's Hopkins, enjoying the fruits of an honorary scholarship awarded him by that institution. Accompanied by Mrs. Etter, they will visit for several weeks in various Eastern points before returning.

Hospitals for Soldiers of the 14th District (of which we are a part), according to announcement by the Veterans Bureau at Washington, are not at this time contemplated. This ends the agitation in the several centers of the State as to the erection of Federal hospitals in that particular locality.

Enid Enters Race for Federal Hospital, so states the state press. We have not yet forgotten that only a few short weeks have passed since that consistent city was found opposing erection of **any** hospital. This, however, was when it was apparently settled that the hospital in question would be located in some place other than Enid. "Consistency, thou art a jewel."

Anadarko Physicians and Attorneys decided to settle their long standing differences anent "who's who" professionally by meeting on the Anadarko field of honor—the base-ball field and having it out. Holding the sponge for the doctors were Drs. Kerley and Taylor, especially charged with the duty of performing a delicate surgical feat by which the "wind" collected on or in the chests of two obnoxious attorneys would be removed and reducing the "chesty" gentlemen to a state of innocuous desuetude, whatever that means.

Dr. Cary W. Townsend, Oklahoma City, has been appointed to succeed Dr. J. T. Martin, who resigned after many years of service as City Physician. Dr. Martin has been the object of many attacks, not one warranted by any set of reasoning or justice, since he has held down the stormy quarter deck of that part of the Capitol City's work. That he performed his work effectively, intelligently, honestly and far above the average, no one doubts for a moment. That he has come to the usual state of experiencing the ungratefulness incident to medico-political service is also fully appreciated by those who are "in on the know." Every one wishes Dr. Townsend well in his undertaking and he may be assured, that as a rule he will have behind him a profession sympathetic and appreciative of the hard row a medical officer must hoe.

Dr. Roy Pendergraft, Hollis, narrowly escaped being the objective of a cyclone while he, with his family and some friends were in the country near his home. The storm passed within a hundred yards of the party, who were almost stifled by dust before that passed. They succeeded in reaching a storm cellar before the force of the storm reached them.

Dr. William Patton Fite, Muskogee, went to Richmond to receive initiation into the University of Virginia Chapter, Honorary Medical Society, Alpha Omega Alpha. The ceremonies, which were public, were conducted on the night of April 12th, at the Auditorium of Madison Hall. Prominent medical men from all over the South were also initiated at the time, among them being Hugh H. Young, Baltimore; Colonel Owen of the Army; Southgate Leigh, Norfolk, and many others who have made their impress upon the medical history of today.

The **Enid News** did much to offset its rather common attitude of hostility and imputation of ulterior motive as to the medical profession when it "did the handsome" toward Dr. Hubert Work on learning he had been given a Cabinet portfolio. This is the way the News puts the case:

"It is, we think, highly desirable that the medical profession should have representatives here and there in the service of the nation. It would be better for politics, which ought to be the science of government and not the resort of Quacks, if the physicians of the nation were more often conscripted into the public service. They know and dare to act upon the difference between sentiment and sentimentality, between public sentiment and organized sentimentality. Having been President of the American Medical Association, Dr. Work goes into the Cabinet with the honor of this endorsement by his fellow physicians upon his public record. The News also observes that Dr. Work, on the score of his previous service as Assistant Postmaster General, his record in that service, was welcomed by the public who know of the situation. "In his new Postmaster General, the President has added a strong man to the strongest Cabinet Washington has seen in many years." To all of which we say "Okeh."

Political and Official Recognition of the medical profession, by appointment to high office of the individual physician brings a feeling of satisfaction to the human medical breast, but, and there comes the rub, there seems to be a system by which everything has some compensatory offsets of equalization tendencies. In our case we are filled with righteous indignation and disgust on knowing the impossible actions of official Washington, in the appointment and designation of ex-soldier beneficiaries, as students in the well-known science (?) of Chiropractic. Unbelievable as it may appear to the physician, the fact is true that through some illogical system of reasoning, the Government has actually taken the role and position that "education" as Chiropractors was a thing of worth and value, a science (?) deserving of recognition, the mastery of which would fit the student for the struggles of his future handicapped existence.

While it must be regretfully noted that such protests are usually productive of not the slightest good, we call attention to the resolutions of the House of Delegates, A. M. A., St. Louis, in which that body memorialized the officer of the Government responsible for adoption of the pol-

icy of entering ex-soldiers as students of Chiropractic schools. The resolution estimates that more than 250 men have been so wronged and deluded into the belief that they were receiving something of value, when as a matter of fact most of them are being pitifully injured by the waste of time and the further fact that only disappointment is the inevitable end. Ignoring the fact that averagely informed laymen are overwhelmingly of the opinion that this so-called science is a worthless fraud, a cheap imitation of the Osteopath, himself yet in a stage of struggling evolution, this officer, whoever he may be, has grievously misused his authority to the end that the very men who should have the Government's sympathetic care and protection, have been placed in a position to receive irreparable injury. The whole matter should have the strictest investigation by the Senate, then, if it is found that that "science" is a fitting one in which these unfortunates should engage in seriousness, all good and well. On the other hand if it is found to be what it really is, then instant dismissal and political degradation should be the experience of this misguided officer.

Oklahoma no longer bows its head in plebeian fashion. For all time, we of medicine may hold forth before the footlights as qualified and second to none, the peer if not the superior among the elect. The cause of it all is that we have acquired that which few states may proudly boast a real "Poet Laureate." This is the gem which placed us over the hurdle. Perpetrated by Dr. O. W. Rice, Alderson, as introductory to his paper "Cholecystitis," read in the Pediatric and Obstetric Section, it has earned the grateful acknowledgment of all of us.

"Maid of Athens, Ere we part,
Give, Oh, give me back my heart." Said Dr. Rice, "Had Lord Byron lived one hundred years later, I believe he would have written,

Maid of Athens, Ere we sever,
Give, Oh, give me back my liver. Parting from his Athenian maid today, he would say, thinks Dr. Rice:

"Maid of Athens, your words are all flatter,
Give, Oh, give me back my gall-bladder."

Speaking for a grateful, state-wide medical profession, we, figuratively remove our dome-piece to Dr. Rice. Our only regret being that we cannot do so in poetic metre. But, visualize if possible our dire extremity on reading a little further on in finding another Richmond in the field. Our medical coal barons must surely spring from poetic forbears, for Dr. F. L. Watson, McAlester, discussing the paper had this to offer, after due acknowledgment to Lord Byron:

"Flapper damsel, in your Fliver,
Keep my gall and keep my liver."

"Maid from the Aegean Sea,
It's bone dry, for you and me."

There is no justice in the situation. These good things should be more uniformly spread over the field. These two inspiring poetic geniuses live in a stone's throw of each other.

The Tulsa County Medical Society met in regular session Monday, May 8, 1922, in the Municipal Auditorium.

The President, Dr. Ball, announced the drive which the Senior Chamber of Commerce has undertaken for the raising of funds for the build-

ing of new quarters. He also announced the completion of plans for the resumption of the construction of St. Johns Hospital.

A Mr. Carmide was introduced and discussed a new process for preparing milk by "Homogenization and actual sterilization."

Dr. Cronk announced the completion of plans for the construction of the Day Building.

Dr. Braswell presented a clinical case of cancer of the esophagus.

A canvass revealed the fact that all delegates plan to attend the meeting of the State Association at Oklahoma City.

Dr. Dunlap made a motion that the State Association be invited to meet in Tulsa in 1924. After some discussion the motion was withdrawn.

Dr. Dunlap moved that the Tulsa delegation be instructed to vote for Dr. Butler for President of the State Association. Dr. Butler offered his resignation as a delegate to the State Meeting since it had been proposed that he be supported for the Presidency of the State Meeting. The resignation was accepted on motion of Dr. Beesley.

Dr. Hendershot proposed that the Society contribute to the fund for erection of a memorial to Dr. Duke. No action was taken.

Dr. Pigford presented a paper on the surgical treatment of fibroids. It was discussed by Drs. Ray Wiley and Osborn.

"A PHYSICIAN FOR A PHYSICIAN'S PLACE."

Woodward, Oklahoma.

Dear Doctor:

The Woodward County Medical Society wishes to call your attention to the state office of Commissioner of Charities and Corrections which, from a medical standpoint, has been neglected by the profession.

This office is an important one inasmuch as it has to deal with the wards of the state who should have, and are entitled to, efficient medical supervision.

Unjust criticism of our institutions is a reflection upon our profession, as every institution has its corps of doctors all worthy of commanding the highest respect.

Believing that the office should be in charge of a physician, we wish to present for your consideration the name of Dr. H. E. Stecher, of Supply, Oklahoma, who has practiced his profession at that place for 18 years, except for the time he was in the service in the World War. He was commissioned a lieutenant on August 15th, 1917, and served with the 3rd Infantry Regulars until his discharge New Year's Day, 1919.

Dr. Stecher has held office and membership in our society ever since coming to Oklahoma. He is a graduate of K. U., is 54 years of age, and has a wife and four children.

We know that Dr. Stecher is qualified in every way to serve the people of Oklahoma in this office.

We should be pleased to have you assist us in Dr. Stecher's nomination and election, thereby giving the important office of Commissioner of Charities and Corrections that efficiency which the state needs. His name will be found on the Democratic ticket.

Sincerely yours,
WOODWARD COUNTY MEDICAL
SOCIETY,
By C. W. Tedrowe, M. D., Secretary.

A WEST POINT OF HYGIENE AT JOHNS HOPKINS.

The International Health Board realized early in its history that a chief problem in disease prevention would be to find men qualified both scientifically and practically to do the work. An ordinary medical school education is not enough. There must be special training in the scientific principles, the administrative methods, and the point of view of preventive medicine and public health.

"After a study of the various possibilities it was decided in 1916 to ask Johns Hopkins University to assume responsibility for establishing a School of Hygiene and Public Health for which the Rockefeller Foundation undertook to supply such sums as might be agreed upon as necessary for buildings, equipment, and annual maintenance.

"The school has three leading aims: to provide a fundamental scientific training, to afford practical field experience under competent supervision, and to add to the knowledge of hygiene. The laboratory and lecture courses deal with: (1) the micro-organisms which are the inciting causes of disease, (2) the study of resistance and immunity, and the preparation of vaccines to protect against certain infections and of sera to mitigate their virulence, (3) the primitive animal parasites, for example, the blood parasite which causes malaria, the ameba of dysentery, (4) the parasitic worms of many kinds, of which the hookworm is the best known, (5) the insects by which diseases are communicated, such as the mosquitoes that spread malaria and yellow fever, (6) the collection, arrangement, and interpretation of statistics about births, deaths, sickness, etc., (7) the methods of controlling infectious diseases, especially epidemics of various communicable diseases, (8) the problems of water-supply, sewerage, disposal of refuse, housing, ventilation, (9) the functions of the human body in relation to health, (10) the chemical aspects of hygiene, (11) the significance, for preventive medicine, of mental and nervous diseases, delinquency, crime, feeble-mindedness, and insanity, (12) the principles of nutrition and diet, (13) the legal aspects of sanitation and hygiene, (14) the rules of health for the individual, (15) maternity and child hygiene, and (16) the organization and administration of public health work.

"Actual experience in the field is gained by visits to various centers of sanitary and health activity and by volunteer service in the Baltimore Department of Health, or under the Maryland State Board, or in connection with the United States Public Health Service. Summer vacation employment with state or municipal health boards or other agencies provides valuable first-hand contact with problems of hygiene and administration. For the current support of the School in 1921 the Foundation contributed \$250,000."

"PREMEDICATED" ALCOHOL.

A petition to permit the use of so-called "premedicated" alcohol in remedies for internal use has recently been placed before the Secretary of the Treasury and prohibition officials. According to drug journals the petition was presented by Mr. Harry B. Thompson, general counsel for the Proprietary Association—the organization of "patent medicine" interests—and also by the

Chattanooga Medicine Company—makers of "Wine of Cardui." It is proposed that alcohol may be denatured, that is, "premedicated," by using just enough of one or more of the ingredients of the particular mixture to be made to render the alcohol unfit for beverage purposes—nominally, at least! When thus medicated, the alcohol is to be tax free. The proposal, which on the face of it may seem attractive because of the great difference in the price of pure alcohol and denatured alcohol, contains dangers to medicine and to pharmacy. It means that alcohol, in such instances, would be denatured or "premedicated" at distilleries, and would then be shipped to the pharmaceutical houses where the manufacture of the medicine would be completed. In case of preparation of high-grade pharmaceuticals, therefore, scientific control would be difficult. Furthermore, it would be necessary for the manufacturer to have as many, or nearly as many "denatured" alcohols as the number of alcohol-containing preparations he makes—a relatively large number; again increasing the possibilities of error. From the scientific point of view, the serious objection is that the proposed plan would disturb pharmacopeial standards and methods of procedure, introducing rigidity where elasticity is often required. Extemporaneous pharmacy would be seriously hampered, and this, in turn, would affect the physician and, more important, the patient. It may be argued that the druggist and the manufacturers of high-grade pharmaceuticals would be under no obligation to use the "premedicated" (and tax free) alcohol; it would merely be permissible. It is obvious, however, that the operation of natural economic forces—competition—would assert itself here as inevitably as in all other fields of commercial enterprise. The use of tax free alcohol, which would cost about 85 per cent less than the taxed product, would supersede the use of the higher priced, pure (unmedicated) alcohol. Of course, the makers of alcoholic "patent medicine" would profit primarily and the distillers secondarily. It seems doubtful to those familiar with the methods of nostrum exploiters that the saving would be passed on to the public.—*Journal A. M. A.*, April 1, 1922.

TREATMENT AND PREVENTION OF PELLAGRA BY A DAILY SUPPLEMENTAL MEAL.

The treatment reported by G. A. Wheeler, Spartanburg, S. C. (*Journal A. M. A.*, April 1, 1922), which was given at the U. S. Pellagra Hospital and Laboratory at Spartanburg, S. C., to test the efficacy of a supplemental diet in the treatment and prevention of pellagra in persons continuing in their normal environment consisted of one meal served daily at midday in the hospital dining room. The dinner consisted of fresh meat, vegetables, sweet milk or buttermilk, wheat bread (loaf) or corn bread, butter and a dessert (usually fruit in some form). Each patient was liberally served and urged to make a full meal; special emphasis was placed on the milk and meat. Aside from this meal, the patients were allowed to follow their individual inclinations and habits, dietically and otherwise. The eruption and, with one exception, the subjective symptoms disappeared within a few weeks after admission; there was no evidence of a recurrence while in attendance at the clinic. Of a

total of forty-eight anniversaries passed by this group of patients from the time of their first attacks to the date of admission to treatment, there had been forty-four (91.6 per cent) regular, consecutive annual recurrences, while of a total of twenty-five anniversaries passed under treatment there was not a single recurrence. Within from five to eight months after discharge from treatment, seven patients developed recurrent attacks, five of whom had had regular annual recurrences prior to treatment and had passed one or more anniversaries under treatment without return of symptoms. A deprivation period of less than eight months is indicated. The facts emphasize the influence of the supplemental meal on the prevention of pellagra.

SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS.

J. Shelton Horsley and Warren T. Vaughan, Richmond, Va. (Journal A. M. A., May 6, 1922), emphasize that stereotyped procedures have no place in the treatment of gastric and duodenal ulcer. Each case must be considered on its own merits. That there are early ulcers which can be successfully treated medically, no experienced internist or surgeon will deny. But because of this fact, one should not blindly endeavor to treat all ulcers solely by medical methods. One might as well attempt to cure an indolent ulcer of the leg by rest and elevation for twelve months or longer, when the same results can be more effectively accomplished in twelve days by the proper surgical procedure. There has been a tendency among internists to treat gastric ulcers only by medical methods, and among surgeons always to operate. The best interests of the patient require closer co-operation between surgeon and internist than has hitherto been the vogue. If it has been decided that a case should be treated surgically, the method best fitted to the condition found at operation should be chosen. Routine gastro-enterostomy in all ulcer cases will give as unsatisfactory eventual results as routine pyloroplasty. The treatment of the patient with duodenal or gastric ulcer is not completed with the operation. Appropriate medical supervision should be continued for a long period to prevent additional damage. The patient's general condition must be studied and treated. Infection elsewhere should be eliminated. The patient's resistance must be built up and the diet carefully controlled to prevent renewed insults to the convalescing organ.

POTENTIAL CARDIAC DISEASE AND PREVENTION OF ORGANIC HEART DISEASE IN CHILDREN.

Sixty-five cases of potential cardiac disease in children were observed continuously by William St. Lawrence, New York (Journal A. M. A., April 1, 1922), for an average period of four and one-half years. Forty-nine patients (75 per cent) remained free from evidence of cardiac disease during that time. Of twenty-five patients with acute rheumatic fever, none contracted a lesion in the heart. Of nine patients with myositis, bone and joint pains and sore throat, none contracted a lesion in the heart. Sixteen patients

(25 per cent) contracted a cardiac lesion while under observation. In every case in which a cardiac lesion developed, the clinical picture was dominated by chorea in a severe form. No patient contracted a lesion in the absence of this manifestation. Of forty-one patients with chorea in the series, sixteen (39 per cent.) contracted a lesion in the heart. Measures of value in preventing disease of the heart are of greatest benefit when directed against acute rheumatic fever and myositis, bone and joint pains (growing pains) and sore throat. Such measures have little, if any, value when directed against chorea. In untreated potential cases, acute rheumatic fever is the most important factor concerning disease in the heart. In potential cases under management, chorea is the most important factor concerning disease in the heart. With the exception of mitral stenosis, cardiac lesions practically always occur during the active phase of a rheumatic manifestation. In the absence of an active phase, the physical signs in the heart remain unchanged. Evidence of mitral senescence may not appear for a year or more after the cessation of the rheumatic manifestations. It is therefore impossible to state at the conclusion of an attack of acute rheumatic fever or chorea that the heart was unaffected by these conditions. Heart rate may have a marked effect on the physical signs of mitral stenosis, as shown by a graphic record.

CONGENITAL DIVERTICULUM OF URINARY BLADDER.

R. M. LeCompte, Washington, D. C. (Journal A. M. A., April 15, 1922), reports a case in which the diverticulum did not cause any symptoms until the patient was 32 years of age. He had a constant desire to urinate; he passed a small amount of urine followed by blood, both fresh and clotted; he had considerable urgency, some dysuria and nocturnal frequency of eight times. Cystoscopy revealed distinct inflammation of the trigon. The opening of a diverticulum was seen lateral to, and above, the right ureteral orifice, with cloudy fluid seeping lazily from it; the diameter of the orifice was estimated to be 8 mm. The bladder was opened by a median suprapubic incision. The bladder margin of the neck of the sac was excised, and the opening thus made was closed by interrupted catgut sutures; a continuous catgut suture was placed to cover the interrupted layer. Examination of the excised tissue revealed elements of all coats of the bladder wall. Recovery was uneventful. This case is described as congenital because there was nothing in the history to indicate prolonged voluntary retention, nor was there demonstrable urinary obstruction, either prostatic or urethral, or the results of such obstruction—bladder trabeculation—on examination or at operation.

CARCINOMA OF SPLEEN.

Carcinoma of the spleen, secondary to cancer of the breast, and part of a general microscopic carcinomatosis was present in the case reported by S. W. Sappington, Philadelphia (Journal A. M. A., April 1, 1922). In this case massage was probably an etiologic factor, an evidence of the danger of tumor manipulation.

REVIEW OF THE CLINICAL SIGNIFICANCE OF THE WASSERMANN REACTION.

The great desire of the medical profession for certain, definite, quick diagnostic procedures Albert Strickler, Philadelphia (Journal A. M. A., April 1, 1922), says has caused many to rely on the Wassermann test as a means of diagnosing syphilis, almost, if not altogether, to the exclusion of clinical evidence. As a matter of fact, the Wassermann test should be considered as a symptom and should be impartially weighed along with the other clinical evidence in making the diagnosis. The profession should not attempt to diagnose syphilis on the strength of a single, weak positive reaction. In Strickler's opinion the following should constitute the status of the clinical value of the Wassermann reaction as a diagnostic measure. (1) A negative Wassermann test is the presence of definite syphilitic lesions is a possibility in certain stages of the disease. This may occur at times in tertiary syphilis, inherited syphilis and also in certain types of neurosyphilis. (2) A positive Wassermann test in the presence of non-syphilitic disease should not always mean syphilis. It should, however, arouse our suspicion to study our patient from every possible angle in our endeavor to explain this positive reaction. It should be borne in mind that a syphilitic patient is subject to any and all ailments that a non-syphilitic patient is heir to. (3) While a strongly positive Wassermann reaction in a subject who is not suffering from any illness should cause us to investigate, nevertheless, too great stress is not to be put on it, unless this finding is confirmed by a number of reliable laboratories.

"FAIR PLAY TO THE PUBLIC."

An editorial in a recent issue of the New York Evening World commented on an investigation that had been made in New York in an attempt to test the quality of "chiropractic" knowledge. Normal individuals went to certain chiropractors, gave fake symptoms, and the chiropractors "discovered" subluxations whose presence defied the roentgen ray. The Evening World very properly pointed out that, possibly, if normal individuals went to reputable medical practitioners and reported fake symptoms, physicians themselves might "fall down" on both diagnosis and treatment. As a result of this comment, the Evening World received a number of letters of approbation from the chiropractors, in one of which the writer commended what he termed the paper's "policy of fair play to the chiropractors." The Evening World came back with an editorial whose title we reproduce in the caption. This editorial contains so much sound sense that we make no apology for reprinting it practically in full:

"The Evening World is vastly more interested in a policy of fair play to the public.

"Fair play to the public would, we believe, eliminate 90 per cent or more of the present practitioners of chiropractic.

"Fair play to the public would require adequate education of chiropractors—for example, a regular medical course plus the specialized postgraduate work expected of a specialist in other fields of medicine.

"In such a course many would-be chiropractors would come to the conclusion that manipulation of vertebrae is not a cure-all, whatever its possibilities.

"Fair play to the public demands that chiropractic processes should be used only by men who know thoroughly what they are doing and why. Both common sense and science deny that all ills are traceable to the spine.

"Fair play to the public demands a strict curb on a great mass of quackery masquerading under the name of chiropractic. Fair play to the public would send a substantial percentage of chiropractors either to school or to jail.

"Adequate education might develop some competent healers of a limited group of diseases from the crowd of incompetent meddlers. But, given education, it is probable most of them would cease to be chiropractors."

FURTHER OBSERVATIONS ON DISTRIBUTION OF VITAMIN B IN SOME VEGETABLE FOODS.

Tablets containing varying weights of certain desiccated vegetables were fed by Thomas B. Osborne and Lafayette B. Mendel, New Haven, Conn. (Journal A. M. A., April 15, 1922), in known amounts, apart from the standard vitamin B-free food offered, along with water, ad libitum. Experiments made with rats indicate that asparagus, celery, dandelion, lettuce and parsley all contain noteworthy amounts of vitamin B. Asparagus proved to be unexpectedly rich in vitamin B. If these vegetables are considered with respect to their content of vitamin B in comparison with apples and pears, or the juice of grapes, asparagus, celery and lettuce, at least, will be found to exhibit a larger vitamin B potency in terms of the edible product consumed. This evidence gives added justification for the nutritive prominence of the vegetable products examined, and serves in part to emphasize their importance in the diet of man.

INFECTIOUS JAUNDICE OCCURRING IN NEW YORK CITY.

A preliminary report is presented by Augustus Wadsworth, et al., Albany, N. Y. (Journal A. M. A., April 15, 1922), of an investigation of outbreaks of what appeared to be an infectious or epidemic type of jaundice, with the report of a case of accidental infection of the human subject with *Leptospira icterohaemorrhagiae*. The patient was a member of the laboratory staff who had been working with virulent leptospiras obtained from a rat. The case is believed by the authors to be the first instance of human infection developing from cultures isolated from rats in this country. The investigation is being continued.

The Oklahoma Medical Journal Deserves Your Support and Co-operation

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*This list is published bi-monthly.

District No. 1. Texas, Beaver, Cimarron, Harper, Ellis, Woods, Woodward, Alfalfa, Major, Grant, Garfield, Noble and Kay. A. S. Risser, Blackwell (Term expires 1924.)

District No. 2. Dewey, Roger Mills, Custer, Beckham, Washita, Greer, Kiowa, Harmon, Jackson and Tillman. L. A. Mitchell, Frederick. (Term expires 1923.)

COUNCILORS AND THEIR COUNTIES.

District No. 3. Blaine, Kingfisher, Canadian, Logan, Payne, Lincoln, Oklahoma, Cleveland, Pottawatomie, Seminole and McClain. Dr. Walter Bradford, Shawnee. (Term expires 1925.)

District No. 4. Caddy, Grady, Comanche, Cotton, Stephens, Jefferson, Garvin, Murray, Carter, and Love. J. T. Slover, Sulphur. (Term expires 1923.)

District No. 5. Pontotoc, Coal, Johnston, Atoka, Marshall, Bryan, Choctaw, Pushmataha and McCurtain. J. L. Austin, Durant. (Term expires 1925.)

District No. 6. Okfuskee, Hughes, Pittsburg, Latimer, LeFlore, Haskell and Sequoyah. L. S. Willour, McAlester. (Term expires 1924.)

District No. 7. Pawnee, Osage, Washington, Tulsa, Creek, Nowata and Rogers. Chas. H. Ball, Tulsa. (Term expires 1923.)

District No. 8. Craig, Ottawa, Delaware, Mayes, Wagoner, Cherokee, Adair, Okmulgee, Muskogee and McIntosh. P. P. Nesbitt, Surety Bldg., Muskogee. (Term expires 1925.)

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Meeting Place, Tulsa, May, 1923.

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UTERINE FIBROIDS AND SURGICAL TREATMENT.*

By A. W. PIGFORD, M. D.,
Tulsa, Okla.

Uterine fibromyoma is a benign, circumscribed tumor which develops in the walls of the uterus. It is composed of muscular and fibrous tissue in varying proportion, and contains blood vessels, lymphatics, and probably nerves. Fibromyomata are rarely single and may be found in large numbers; these tumors are also known as fibroids (fibroma, myoma, leiomyoma, hysteroma, etc.). Terms fibromyomata fibroids and myomata are often used interchangeably.

FREQUENCY.

Fibromyomata are generally regarded as the most common neoplasms in the human body, yet, it is difficult to estimate that frequency because many of them present no symptoms. Varying percentages have been given by different authors. Bayle states, that they occur in 20% of all women over 35 years. Klob, that they are present in 40% of all women over 50 years. In the record of 1,860 autopsies made at St. Bartholomews Hospital, there were found 80% present. It has been my experience with the southern negroes, that at least 50% over 50 years have fibroids; however, the proportion which causes symptoms is very much less.

AGE.

Fibroids may develop at any period of life, but rarely are observed before the 25th year. Some authors have described them in new born children; others, in 8, 10 and 15 years old. Roger Williams has analyzed 100 cases and found that the average age at which symptoms develop is 37 $\frac{1}{4}$ years. The earliest age in which I have found fibroid present was 24 years.

ETIOLOGY.

We have little definite knowledge concerning the etiology of this form of tumor,

although the majority of investigators believe that they are congenital, yet it is difficult to determine what part heredity plays in their production. There are frequent instances of fibroids occurring in members of the same family, but these must be looked upon as coincidences, than as examples of cause and effect; for, as can readily be seen, the growth which constitutes 80% of all gynecological cases, and which exist in from 20 to 50% of women past middle life, will be described very frequently in large families in which the family life history is well known. There is furthermore, a dispute as to the site of origin and the factors which predispose to the growth and development of the tumor. The site of origin has been ascribed chiefly to two sources, that is the blood vessel walls and the uterine muscle; there is, however, almost unanimity of opinion among the more recent investigators in ascribing the origin to the blood vessel walls. Roesger first called attention of investigators to the possibilities of origin to the blood vessel walls. Because of the absence of the adventitia in the smaller arteries of the small fibroids, he came to believe that the tumors originate on the longitudinal or cross muscle bands of the arterial wall. Gottschalk regarded the starting point as the very tortuous part of certain arteries of the uterine wall. He found the lumen of some vessels considerably narrowed at certain points or else entirely obliterated, and concluded that such a corkscrew-like section of an artery constituted the nucleus of a fibroid. Pilliet states that the adventitia gives rise to a zone of embryonic cells which develop into concentric rows of muscle fibers. The outermost of these are transformed into fibrous tissue from lack of proper nourishment. Bishop says that although some tumors may arise from embryonic remains (adenomyoma), the majority are derived from blood vessels; and in favor of this view, he says that in the ordinary hard fibroid there is usually only one connective tissue pedicle through which blood vessels enter the tumor. He

*Read before Surgical Section, Oklahoma City, May 10, 1922.

also calls attention to the fact that when calcification occurs, it always begins almost at the part of the periphery which is farthest away from the blood supply; also that, if the vessel supplying in a nodule become thrombosed, the entire nodule softens and liquifies, leading to the formation of a cavity into which surrounding nodules tend to project. The whorled appearance is strongly suggestive of a vascular development, inasmuch as the majority of uterine vessels are markedly convoluted. There is considerable discussion as to the factors which predispose to the growth of the tumor. Sexual irritation is about the only cause which has been admitted, although, even this has been denied by many. The advocates of this theory attempt to prove that fibroids are more common in women who have not borne children, and they advance the view that the uterine muscle which has been denied the opportunity of physiological hypertrophy in this manner, is prone to the pathological development of musculo-fibrous tissue as a result of sexual stimulation. Yet the subject of the relation of sterility and fibromyoma must be approached carefully. From the evidence I have been able to gather from men with extensive experience with women belonging to the religious orders, in whom uterine fibroids are very common, it seems that sterility is a great predisposing cause of fibroids, and that fibroids are not so common a cause of sterility as is generally believed. This theory, however, leaves unexplained the occurrence of fibromyoma in young women who conceive early and frequently.

GROWTH OF UTERINE FIBROIDS.

As a rule uterine fibromyomata grow slowly and steadily, and the greater the relative proportion of fibrous tissues, the slower to growth. Uterine fibroids increase rapidly in size during pregnancy, and often decrease during the involution of the uterus in the puerperium. The majority also diminish in size following the menopause, although they often grow rapidly in the years immediately preceding this change; thus, Bland Sutton in 1903 found that in 10% of the cases requiring operation, the women were in or near the menopause. Spontaneous atrophy is extremely rare at any time. Sudden increase in size is not rare and is usually due to oedema from some disturbance of the local circulation. Even in pregnancy, oedema is largely accountable for the apparent growth. The size of the tumor may vary

during menstruation, and this is especially true of adenomyomata which are swollen and congested at this period. The tumors are usually small, but may attain an enormous size, rarely however, do they weigh more than 40 pounds. The very large tumors reported are invariably cystic and not true fibroids.

CLASSIFICATIONS.

Fibromyomata may be classified from several standpoints. Histologically they may be grouped according to the predominant tissue of their composition, as smooth muscle elements predominate, are termed myomata in contrast with the fibromata in which fibrous tissue predominates. When the component tissues are both well represented, the growth may be termed a fibromyoma. Fibroids are also classified according to their situation, either in the body or cervix of the uterus, and both the latter classes may be subdivided according to their location in the wall of the uterus, or their relation with the peritoneum or the mucosa. All of these tumors in the beginning are situated in the body of the uterine wall. As they increase in size they expand in the substance of the wall and remain there, or else spread toward one of the two surfaces (peritoneal or endometrial), and become sub-peritoneal or sub-mucous. Hence we have three chief varieties, interstitial or intramural, sub-peritoneal or sub-serous, and sub-mucous. Practically all fibroids are interstitial in their beginning and it may be difficult to say just at what point a growth becomes either sub-peritoneal or sub-mucous. The cervical tumors may be classed like those of the uterine body.

SUB-PERITONEAL FIBROMYOMATA OF THE BODY OF THE UTERUS.

These tumors originate in the uterine wall and grow outward toward the peritoneum. At first they are sessile and attached to the uterus by a broad base; later, if the outer growth continues, they become pedunculated and are attached to the uterus by a stump of uterine tissue in which run the nutrient vessels of the tumor. The sub-peritoneal pedunculated fibroids vary in form but are usually roughly spherical or ovoid. The form is dependent in a manner upon pressure from contiguous structures. The tumors are usually multiple and of small size, occasionally they attain considerable dimensions. The outer surface of the growth is covered with peritoneum which has extended over from the uterus in the growth

of the tumor. As a rule the peritoneum is rather firmly attached to the fibromyoma. The vascular supply is generally scanty and varies according to the size and component structure of the tumor.

The length and thickness of the pedicle varies considerably.

INTERSTITIAL FIBROMYOMATA OF THE BODY OF THE UTERUS.

Interstitial fibromyomata of the body of the uterus remain in the body of the uterine wall and do not become pedunculated. As they grow the musculature expands rather evenly around them. They are separated from the normal muscle by a thin layer of loose connective tissue, from which they can be easily shelled out when the incision is carried down to the tumor. As a rule the growths are multiple, yet one tumor often develops while others remain of small size.

SUB-MUCOUS FIBROMYOMATA OF THE UTERUS.

From a clinical standpoint they are of the greatest importance. They are most frequently seen in or near the fundus, from which they tend to project into the cavity of the uterus. Frequently they are pedunculated, when they are known as fibrous polyps, yet occasionally they are attached over a broad base. When a sub-mucous growth projects into the uterine cavity, it acts as a foreign body and produces uterine contractions. This leads as a rule to an elongation of the pedicle and even to its extrusion from the uterine cavity. As a result of the tumor's growth, the uterine wall is increased in its area, yet it is usually thin at the site of the pedicle. Occasionally an inversion of the uterus occurs, this result being due to the paralysis of the thinned muscular wall from which springs the tumor. As a rule there is but one polypoid growth. They are usually round, softer, and more vascular than the ones previously described. Due to their vascularity, the growth is fairly rapid. During menstruation the tumor becomes congested and enlarged and stimulates the uterine contractions.

FIBROMYOMATA OF THE CERVIX.

Fibromyomata of the cervix are rare. They may arise from either wall, but are more common in the posterior parts, like those of the uterine body they may remain interstitial or extend into the cervical cavity, or grow outward beneath the peritoneum. Tumors extending toward the peri-

phery may grow anteriorly between the bladder and the uterus, laterally into the broad ligament, or posteriorly into the pouch of Douglas. Menorrhagia is consequently not common, and the bladder and rectum symptoms are frequent. The sub-mucous growths may produce elongation of one cervical lip and form a polypoid tumor in the vagina. Such cases may easily be mistaken for inversion or prolapsus. These tumors are especially dangerous in pregnancy and labor, they develop more rapidly than those of the uterine body on account of their proximity to the larger blood vessels.

TREATMENT.

Treatment of fibroids may be expectant, palliative or radical. Many of the small growths produce no symptoms and their recognition is accidental. The great majority of these require no treatment whatsoever.

EXPECTANT TREATMENT.

When a small growth is accidentally discovered, the case should be kept in observation even after there are no symptoms; should be seen at intervals of five or six months and careful note should be kept showing the size of the tumor and history of symptoms should they occur.

PALLIATIVE TREATMENT.

The main object of this treatment is the control of hemorrhage, as the other symptoms are not apt to respond to treatment. The use of the x-ray and radium is especially beneficial. Some men are now reporting wonderful results with the use of radium, reducing the size of the tumor and stopping hemorrhage completely. This is very beneficial in inoperable cases.

RADICAL TREATMENT.

Fibroids of any consequence should be removed unless there are contra-indications to surgical interference. The surgical procedures employed at the present time are myomectomy and hysterectomy; and the relative advantages of these have been the subject of much dispute. From the standpoint of pure theory, myomectomy has many advantages of a considerable nature. It leaves a woman under 40 years of age able to bear children, it preserves menstruation and avoids an artificial menopause which frequently entails many distressing nervous complications; however, myomectomy does not guard against recurrence. There is no absolute

certainly that myomectomy will relieve the suffering of the patient. The immediate results of myomectomy are usually not as good as those of a radical operation. Myomectomy may be performed through an abdominal or a vaginal incision. Personally I prefer the abdominal incision; however, (a) Infected sub-mucous myomata which are contained in the cavity of the uterus or are undergoing expulsion into the vagina, may be removed by vaginal route more safely than by abdominal; (b) Myomatous polyps contained in the cavity of the uterus or projected into the cervical canal down into the vagina; (c) Sub-mucous tumors when single and of not great size, especially no larger than a grape-fruit, which can easily be pushed down into the pelvic canal, can be removed in this manner; (d) Cervical myomata of moderate size which can be reached by means of vaginal hysterectomy and can be enucleated with comparative ease and safety; (e) Sub-peritoneal myomata of moderate size which are situated on either the anterior or posterior wall; (f) Single intramural myomata of moderate size and especially those which are situated on the anterior wall.

If a fibroid polypus be still intra-uterine, the proper treatment is to dilate the cervix, and if the pedicle be sufficiently thin, to seize the growth with a pair of stout polypus forceps and twist it off by a small rotary movement of the handles. Should the pedicle be thicker than the finger, the use of a wire ecraseur is advisable, this causing the wire to cut slowly through the pedicle of the growth.

Operations in sub-mucous sessile fibroids in which the lower segment of the uterus is somewhat thinned out and dilated, preliminary dilation of the cervix by bougies may be necessary. The capsule of the tumor is then incised and the growth is enucleated by means of the finger. In some cases mere incision is sufficient, the uterus expels the growth. In some cases it becomes necessary to remove the tumor in piecemeals by means of special made forceps. These forceps are somewhat like those used in lithotomy, with sharp teeth like a Vol-sella, the tumor being partly cut and twisted off.

Interstitial fibroids should be removed either by vaginal or supra-pubic hysterectomy. Personally, all things being equal as I have previously stated, I prefer the abdominal route.

IN CONCLUSION.

That uterine fibromyomata are generally benign growths but may undergo malignant degeneration.

That fibromyomata are growths of the sterile woman and is a disease of the later periods of female life, seldom being found under the age of 25 years.

That the etiology is as yet an unknown quantity, but the consensus of opinion is that they are congenital, and that heredity plays no part in their occurrences.

That the origin of the tumor is in the blood vessel walls and not in the muscular tissue of the uterus.

That the factors which predispose to the growth of the tumor are as yet unknown.

That the growth is usually a slow one, but pregnancy causes them to increase in size rapidly; to decrease again during the puerperium. They may decrease in size following the menopause but never entirely disappear.

That all fibromyomata originate as interstitial growths, and the classification into interstitial, sub-mucous and sub-peritoneal, is merely an indication that the growth enlarges in these directions and are not other tumors.

That fibromyomata are distinctly growths of the body of the uterus, but are occasionally seen in the cervix.

That the treatment is generally by radical operation, either myomectomy in properly selected cases, or subtotal or complete hysterectomy.

That in small tumors with bleeding, radium has given some excellent results but care should be used in its application.

Discussion: DR. L. S. WILLOUR, McAlester.

In the discussion of Dr. Pigford's paper I think there is nothing to be said as to the first portion as it is a statement of well-recognized facts and conforms to the text of our recent authors, but as to treatment it appears to me that there is much for our consideration.

First, as to choice between surgery and radiation, second, when surgery is employed as to the character of operation, whether myomectomy or hysterectomy, then as to whether hysterectomy should be supra-vaginal or complete, and lastly as to

whether or not ovarian tissue should be conserved.

Some very convincing arguments can be deduced from a study of cases treated by radiation published recently by Dr. C. Jeff Miller. It might be well to mention here some of the contra-indications to the use of radiation as these cases will necessarily fall into the surgical class. This treatment should not be used in young women with definite growths or where there is any suspicion of malignancy. The dose of radium has not as yet been definitely enough determined to foretell whether or not ovarian function will be destroyed and in possible malignancy surgery with direct observation of the uterus should always be practiced. Large myomata should always fall into the surgical class unless there is some co-existing or complicating condition making operation impracticable. Sub-mucous growths owing to their tendency to slough and become infected are usually surgical; this character of growth is also least affected by radiation. The existence of any pelvic infection is a most distinct contra-indication to the use of radiation as it will in most instances light up the infection and develop it into an acute condition.

We may now say that radiation is indicated in those cases usually classified as fibrosis, essential hemorrhage, hyperplasia, etc., and as radium will control the bleeding in cases that have become more or less exsanguinated it may be used to stop the bleeding and place the patient in better condition for operation. It can also be well used in cases where for any reason operation is not a safe procedure.

Dr. W. J. Mayo read a paper before the Surgical Section of the A. M. A. at New Orleans in which he plead for conservation of the menstrual function in the treatment of these tumors of the uterus and insisted upon myomectomy in the place of hysterectomy where this operation is possible. When we consider the delicate nervous mechanism and the effect that destruction of the menstrual function has upon this complicated part of a woman's organism we can not help but see that any shock that can be avoided comes within our duty to our patient. Not only is the menstrual function preserved but in many cases a careful repair of the remnants of the uterus after the tumor or tumors are removed may make pregnancy possible. It is our duty to our patient and to society to preserve menstruation, even though later

a second operation may be necessary, which is not frequently the case.

In cases where hysterectomy is indicated there are two procedures that I am sure should always be practiced; the first is complete hysterectomy, and the other is conservation of the ovary. Complete hysterectomy, for if the cervix is left it is at once a cancer possibility. To treat it in any way such as coring it out or plunging a cautery through it is not sufficient as Dr. Turley has shown in a paper read before the Medical Section today that 90% of cancers of the cervix spring from the vaginal mucous membrane and are squamous cell type. As to the preservation of the ovary, Dr. Clarke of Philadelphia, reports 171 cases of hysterectomy in which either one or both ovaries were conserved and in no case has secondary operation for removal of the ovary been necessary, it is his conclusion that undue emphasis has been placed upon cystic degeneration of the remaining ovary. However, it is necessary to leave the ovary in good position and with sufficient blood-supply. There is no question but what the ovary continues to function and the menopausal symptoms are less acute and of shorter duration, more nearly conforming to the normal type.

DR. J. S. HARTFORD, Oklahoma City.

This study and review of fibro-myomata has brought out the importance of this condition and the liberal manner in which it is presented opens up a good field for discussion. The doctor has appreciated that quite a large percent of these cases do not give symptoms and do not require treatment. This is taking the proper view as many times we are prone to give too much significance to some small fibro-myomata that are giving no symptoms.

The size of the tumor mass plays an important role in its treatment. I believe a fibro-myomata that is filling the pelvic cavity while not showing much above the pubes is a case for surgery from pressure symptoms alone; any tumor larger than this certainly comes under the surgical class. I am favorable to myomectomy in a woman under 40 years of age, where pregnancy is considered. The series of cases that have been reported show conclusively that we may do a myomectomy in a younger woman and subsequent pregnancy take place without complications.

In the removal of fibroids I am partial to

the abdominal route and do not believe the removal should be attempted through the vagina only in the small pedunculated submucous tumors. I am aware that the percent of malignant development varies from one to eight per cent with different authors; I believe this may change to a higher percent of malignancy as our hospitals require laboratory work on post-operative tissue.

I feel that x-ray and radium has offered us a most excellent adjunct to surgery, but I am here advancing a warning that this type of treatment should not be given until a diagnosis is made of fibro-myomata, uncomplicated by old chronic tubes and pelvic adhesions. The great advance of placing radium and x-ray in hospitals, owned and controlled by the hospitals will bring us soon a set of statistics which will be unbiased and helpful.

DR. A. L. BLESCH, Oklahoma City.

This paper being well written and well discussed, there remains little to be said. However, in those cases in which by election the cervix has been left little was said relative to its treatment. This is a matter of considerable importance, too, in that for some reason, to my mind not clear, it very often gives rise to a most persistent and irritating leucorrhoea. At the present time I have in my hands for treatment just such an occurrence.

To overcome this unpleasant feature all that is necessary is to destroy the cervical mucosa. For this purpose we thoroughly cauterize it at the time of the operation, as the canal lies open before us, with the electro-cautery. Any form of actual cautery will do as well. We prefer the cautery for the reason that it is simpler of application than "rimming out" with scalpel, bistuary or scissors.

I cannot agree with the speaker who believes that ovarian degeneration following hysterectomy is due to circulatory disturbances caused by the type of broad ligament suture used. Rather I believe it due to the ovarian prolapsus following the removal of ovarian support and to binding adhesions which form about the organ in consequence.

After removal of the uterus it is our custom to suspend the ovaries "high and dry" to the anterior parietal peritoneum. Here they function without interference

and if they ever require removal are most easily accessible. Many times when the ovaries appeared too bad to leave in the belly I have removed and transplanted them in the abdominal wall pre-peritonally with excellent results.

Relative to irradiation either by x-ray or radium in this class of tumors, we find its principle field as an adjunct to surgery. In inoperable cases which are so because of exsanguination the hemorrhage, the metrorrhagia can be controlled and the patient brought to safe operability.

Surgery has been, is now and we believe will remain the treatment of election. But it should be rendered as safe as possible. In this day of the utmost refinement of surgical technique, we do not believe any surgical achievement, however great, ever justifies enough surgery to kill the patient.

CANCERS OF THE CERVIX.

By L. A. TURLEY, A. M., Ph. D.,

Professor of Pathology and Assistant Dean of School of Medicine, University of Oklahoma, Pathologist at University Hospital and Consulting Pathologist at St. Anthony's Hospital, Oklahoma City and El Reno Sanitarium, El Reno, Oklahoma.

The mortality statistics for 1920 state that the total number of deaths from cancer of the uterus in the United States for that year was 13,452 which places the uterus second only to the stomach in the frequency of deaths from carcinoma, the number for the stomach being 22,292. When we consider the fact that cures of cancer of the uterus are much more frequent than the cures of cancer of the stomach so that the ratio of deaths to the number of cases is much lower for the uterus than for the stomach, and in view of the further fact that cancer of the uterus affects only one-half of the population we see that no other organ is so frequently the site of malignant disease as is the uterus. The knowledge of this fact raises in our minds a number of questions which are: (1) why should tumors be so frequent in this region? (2) what kinds of tumors are they? (3) which of the numerous factors responsible for tumor growth are operating at this point? (4) what are the signs and symptoms of tumor growth in this locality? (5) what is the manner of progress and dissemination of these tumors? Because it is the medical men rather than the surgeons who see patients

in the early stages when there is some hope for cure. It is with the hope of throwing some light on the above questions that I am presenting this paper and while I realize that it is impossible to adequately treat any one of these questions in the time allotted to me I will have to take for granted that you know a good many fundamental facts which have a bearing on this discussion and limit what I have to say to the more strictly pathological aspects.

First, let me recall to your minds the histology of the uterus and especially of the cervix and in as much as carcinomas or cancers develop only from epithelium, so far as this discussion is concerned we have to consider only the epithelium in the different parts. The vaginal surface of the cervix and the external os are covered with stratified squamous epithelium. In the canal there is a sudden change to simpler columnar which is continuous with that lining the corpus. From the canal and the corpus there are simple tubular glands also lined with simple columnar epithelium. These glands go into the wall of the uterus to a considerable depth, in the corpus extending through the mucosa into the first part of the muscularis. I shall ask you to keep these histological facts in mind in the following discussion.

As to the site of carcinoma development some authorities, Baecker and Blumenfeld, say that 97% of the cancers of the uterus arise from the cervix and no authority places the number lower than 90% of the total uterine cancers arise from the cervix. In the cervix there are three main sites of origin,—the vaginal surface, the orifice of cervical canal and the canal itself. Referring to our histology, two of these sites are covered with stratified squamous epithelium and the third with simple columnar. This would, to a certain extent, determine the kind of cancer we would expect to find in as much as the only type of cancer which arises from columnar epithelium is the adeno-carcinoma or medullary carcinoma and the type arising from stratified squamous epithelium would be some form of the squamous cell series. It might be expected that the majority of the tumors of the cervix would arise from the columnar epithelium since it is a habit of the glands of the cervix to undergo hyperplasia even to the point of formation of polyps on the surface and it is very common to find the glands in the mucosa undergoing changes resembling adenomas and we all know that it is common for adenomas to become malignant. But, as a matter of

fact, this seldom happens in the uterus, probably less frequently than in any other location in the body. Moreover, study of the histology of cancer of the cervix shows that over 95% of them arise from the stratified squamous epithelium. On first thought it may seem to matter little what kind of carcinoma it is so long as it is definitely carcinoma, but this is an all important consideration and Dr. Gardner of Baltimore, says that it is as important to know the kind of carcinoma, as it is to know whether or not the carcinoma exists, because the progress and prognosis and treatment all depend on this point. For this reason I am going to take a few minutes to discuss the carcinomas arising from stratified squamous epithelium.

You all know that this type of epithelium is composed of three distinct layers of cells called, respectively: stratum germinativum, stratum spinosum, stratum corneum. The first two of these layers of cells are living, therefore possess all the powers of nutrition and multiplication. The third layer or stratum corneum is composed of dead cells and therefore cannot take part in tumor formation. Due to the fact that there are two distinct types of cells in this tissue which are living it is possible to find (1) tumors arising from each one of them, in which the tumor cells bear more or less close resemblance to the cells from which these arise, (2) tumors in which there is a mixture of these two types of cells, and also a fourth type in which the normal processes are more complete, consequently a tumor in which there would be all three layers of cells present, the stratum corneum being represented by extensive layers and masses, by epithelial pearls, or by whorls of cells that have not undergone keratinization. So there are at present recognized the epidermoid carcinoma, the acanthoma, the spinous cell carcinoma, the basal cell carcinoma, the two atypical forms,—the epithelioma-adenoides cysticum and the carcino-sarcoma. These latter two types being really atypical forms of the basal cell carcinoma and the spinous cell carcinoma. Ewing, Gardner and others mention a scirrhus carcinoma based on the manner of growth rather than on the type of cell. This makes seven different types of carcinoma developing from the cervix but, as was stated above, the epithelioma-adenoides cysticum is one form of the basal cell carcinoma and the carcino-sarcoma, or the transitional cell carcinoma, is one type of the spinous cell carcinoma, so we find five different kinds of carcinoma of the cer-

vix, four of which develop from the stratified squamous epithelium. The epidermoid carcinoma is rare and the true basal cell carcinoma is not much more common, but the various types of the spinous cell carcinoma constitute about 90% of all the carcinomas of the cervix. They are not only the most common but the most malignant and are the type that are most common in young women. They have been reported as early as 2 years of age. One regrettable thing about both the spinous cell carcinoma and the adeno-carcinoma is that they rarely give any symptoms during their early stage and are very frequently not discovered until they are so extensive that successful cure is very doubtful. This is one reason why practitioners should be on careful watch for suspicious conditions. It is far better to be alarmed about a seemingly insignificant sign or symptom than to wait until the diagnosis is perfectly evident.

As to the manner of growth and extension of the carcinomas of the cervix the process varies with the type of tumor present. According to Gardner only 13% of all carcinomas of the uterus metastasize by the lymphatics. The adeno-carcinoma tends to go upward and involve the corpus and later to extend to the neighboring structures. The epidermoid carcinoma is slow growing and tends more than any other to remain local and appears as irregular cornified out-growths on the surface. The basal cell carcinoma also tends to remain local and to burrow in slender cords upward in the tissues of the uterus itself. The acanthomas and especially the spinous cell series tend to extend into the broad ligament and the neighboring organs early in their development. Among the spinous cell varieties there are two general habits of growth. In one case the surface epithelium breaks down early and the tumor appears as a cauliflower-like growth involving the vaginal portion and extending into the vagina itself. In the other case the surface epithelium is rarely disturbed until late in the process, the tumor burrowing into the under-lying tissues and out into the broad ligament, leaving the surface intact. In one of my own series the presence of carcinoma was not suspected because of the normal appearance of the cervix, the tissues being removed for another reason and Dr. Cullen recently wrote me that he had had several cases similar to this one where the existence of the carcinoma had not been suspected and was revealed only on examina-

tion by the pathologist. When men of the experience and ability of Cullen are deceived as to the presence of these neoplasms you can easily realize how little evidence they must give of their existence. In as much as I am not a clinician I can not give you any information from personal experience that would aid you in making an early diagnosis, therefore I am leaving this point for clinicians who discuss this paper to bring out.

The answer to the question as to why carcinomas of the cervix should be so common is very simple to the pathologist because a careful consideration of the facts would lead to the conclusion that this is just what would be expected. Time will not permit me to go into detail as to the cause of tumors. But it is high time that we cease regarding tumors as some extraneous growth, like mistletoe growing on a tree, and that they are due to some undiscoverable etiological factor, and to recognize that tumor growth is an atypical manifestation of normal factors and that these growths are composed of and developed from normal cells of the body departing from the normal cells only because of the conditions under which they have developed, and to recognize further that every cell in the body is a potential tumor cell requiring only appropriate conditions to take on a neoplastic development. If you would ask me to state in a few words the cause of tumor growth I should answer that it is the freeing of a group of cells or a single cell from the tissue set, or, in other words, a relieving of a group of cells or a single cell from the normal controls of their development and reproductive processes. The character of the resulting tumor and its departure from the normal tissue depending upon the extent to which the cells have been relieved from these controls and the problem for us in each case is to determine in each instance which of the factors which will free cells from the control of their development are operating in this particular case. In the few minutes that I have left I will discuss the particular factors that are operating in the cervical region.

One of these factors is trauma. Not a single blow or bruise or tear but a trauma of such a character that it calls for a sustained effort on the part of a few cells for the repair of the tissues traumatized. Another and a very potent cause of tumors is a long standing, mild inflammation with or without actual destruction of tissue. Any inflammation, however slight, always calls

for regenerative processes on the part of the cells in or around the area of inflammation. So that an inflammation with or without surface erosion or in other words a chronic cervicitis or endocervicitis would call for long continued regenerative and reparative processes on the part of the cells of a relatively small area which would finally result in the breaking down of the tissue set and carcinoma is the logical result. Polese states that 70% of the carcinoma of the cervix are preceded by endocervicitis or cervicitis. Another factor operating in the cervix is the fact that the uterus is an organ which is so continuously undergoing progressive and retrogressive processes in carrying on its normal functions that the cell controls are not so strict as in a more stable organ. Another factor is the operation of the biological law that whenever an organism is approaching death by what might be termed physiological processes there is always an extra effort made at reproduction and this is one of the many reasons why so many cancers of the cervix develop from the surface epithelium, for, as you know, the middle layer of stratified squamous epithelium, normally rapidly passes from active reproductive cells to dead cells so that on the one hand these cells are being freed from control and on the other hand there is this extra effort at reproduction on the part of the cells undergoing this process. It is the operation of these two laws which accounts for carcinoma being more common as the age of the patient advances. Therefore, to sum up the etiological factors we find frequent destructive trauma and frequent mild chronic inflammation affecting an unstable tissue which is normally liable to make an extra effort at reproduction under a reduced control so that, as I said a few moments ago, it is not surprising that cancers of the cervix should be so common and that such a large majority of them should arise from the surface epithelium.

Discussion: DR. L. S. WILLOUR, McAlester.

Owing to my lack of knowledge it is impossible for me to discuss Dr. Turley's paper from the standpoint of the pathologist, but I have been asked to say something as to the early diagnosis and to make any possible suggestions as to some method by virtue of which these cases may be brought to treatment while cure is still possible.

Unfortunately cancer of the cervix

gives but meager symptoms early. The first symptoms presenting being increased vaginal discharge. This is due to hyperemia and as the walls of the blood-vessels are changed by the new growth and become more permeable, there is an exudation of blood plasma and the discharge assumes a more watery character. This is as a rule the first noticeable symptom and is quite significant. With the further destruction of the blood-vessels, bleeding which is first manifest as the result of trauma as from coitus or vaginal examination will present itself.

Now as it is so seldom that these patients with early symptoms present themselves for examination or treatment it is necessary that some steps be taken whereby the woman with symptomless, beginning cancer of the cervix, will be discovered.

As has been shown by Dr. Turley in his paper these conditions are most often the result of trauma and irritation, consequently all men doing obstetrics and gynecology should keep the patient with laceration of the cervix under close observation. Not all lacerations of the cervix need repair or amputation, neither does every case of endocervicitis need operation, but the lacerated cervix that does not demand surgery should be often observed for any indication of beginning malignancy and every case of endocervicitis should be treated until cured.

Theilhaber of Munich, has shown that cancer of the cervix is much more apt to occur in patients of the lower classes, where the resistance is lowered by poor nourishment and over-work. This gives to the clinical centers a duty in making a speculum examination in their out-patient departments a part of every routine examination in all women who have had children or present symptoms of cervical involvement. This should also apply to similar cases that come to our service in private work, in this manner once in a while we will detect a case that would otherwise go on to an inoperable condition. To save one life is well worth this extra time and trouble.

DR. WM. H. BAILEY, Oklahoma City.

The importance of Dr. Turley's paper cannot be too strongly emphasized. The fact that, according to Ewing, the uterus is the most frequent location of primary carcinoma in the body, and that 90% of uterine cancers arise in the cervix, makes

that portion of the uterus of particular importance.

Not too much stress can be laid on the early diagnosis of this condition. I feel that with this condition, the same as in the diagnosis of syphilis, as Dr. Stokes of Rochester, says, it is necessary to have a suspicious mind. You must be suspicious of carcinoma of the uterus being present. You must recognize the pre-cancerous conditions that may later change over into a true malignant condition.

These pre-cancerous lesions of the uterus, or contributing factors, as mentioned by Dr. Turley, are: 1st, trauma (not the trauma as caused by direct blows, but the small multiple traumata from the shifting from side to side, and pulling on the ligaments, as the uterus floats around in the pelvis). 2nd, long standing, but and endometritis which, as you know, we see so frequently). 3rd, erosions of the cervix. 4th, scars of the cervix from cervical tears.

Fibroids of the uterus must also be considered as a contributing factor as, according to Alshausen, 10% of fibroids are associated with cancer.

Although scars are contributing factors, the cancer doesn't usually start from the scar itself. It is the frequent call upon the tissue to repair itself after repeated tears that causes the cells to develop a tendency to reproduce and at any time they may start to growing wild and a cancer result.

The lesions of the cervix that are to be looked upon with the most suspicion are the small round, hard nodule (often located on the posterior lip), the indurated ulcer, or erosion, and the low broad-based papilloma. All of these are pre-cancerous lesions and very often followed by true malignant conditions.

There is one point I wish to make about the microscopic examination of curettings, or cervical tissue. Dr. Turley stated that there was a certain percentage of uterine cancers that begin growing beneath the surface mucosa and so may attain considerable development before they give any evidence on the surface. You can readily see how in these cases if lightly curetted, or if a very thin section of cervical tissue be taken, a microscopic examination of the tissue might have a non-malignant condition reported and still there be a cancer present in the underlying structures.

Closing Discussion: DR. TURLEY.

The question of precancerous changes has been brought out. While I realize the extreme importance of this subject it is a

story in itself and too large a story for this summary. Trauma was emphasized as one of the important cases of carcinoma. It is not so much trauma as such but the nature of the trauma which has to do with causing a carcinoma. It is very doubtful whether a single trauma of any nature whatsoever ever gave rise to a carcinoma unless it injured some misplaced embryonic cells, thereby stimulating them to growth. But the trauma that is of importance in causing tumors is the long-standing mild trauma which calls for regeneration and repair on the part of a relatively small number of cells for a considerable period of time or a trauma which results in a chronic inflammation which calls for regeneration and repair for a long period of time. Dr. Andrews' point that carcinoma is surrounded by an outline of inflammation is entirely correct. Carcinomas are always surrounded by inflammatory areas whether or not these are severe enough to give signs that can be recognized in the gross. Another point which needs special emphasis is not only inspection but palpation, especially of the cervix as the feel of the cervix is sometimes the only sign of the existing carcinoma, so that every inspection should be accompanied by digital examination. A recognition of early carcinoma is extremely difficult in the cervix, far more so than in other parts of the body, which can be examined for the reason brought out that it is often a sub-surface tumor and gives no external manifestations of its presence until it is beyond the point where it can be cured. Therefore the recognition of an early carcinomatous condition is of the utmost importance. Ulcerated areas which do not readily heal, especially if they have elevated margins or an elevated spot in the margin, small sub-surface areas of firmness and polypoid conditions of the canal should always be regarded with suspicion and every means available be employed to determine whether or not these are early carcinomas. And finally I cannot emphasize too strongly the duty of the family physician in the detection of these early conditions because these are the men who are first consulted and have the closest contact with the patient and who are in the best position to make an early diagnosis. But through lack of appreciation of early signs and symptoms or from fear of frightening the patient and for other reasons indications are overlooked and let pass which later result in the death of the patient because of presence of the carcinoma which

has been allowed to get beyond control because of neglect of the family physician. A typical case of this kind occurred in my own family. One of the female members of the family went to a physician complaining of a slight odorous discharge after the menopause. The physician gave her some pills which he said would dry it up and it was not until a year later the condition was brought to my attention, at which time it was impossible to save the woman's life because the carcinoma had involved all the structures in the neighborhood.

RADIOTHERAPY IN THE TREATMENT OF UTERINE BLEEDING.

S. D. NEELY, B. S., M. D.,
Muskogee, Oklahoma.

The application of roentgen rays and radium upon selected cases in gynecology is no longer new. Since Halberstadt's definite proof of the selective action of the ray upon ovarian Graafian follicles, and Albers-Schonberg's discovery in 1902 of the sterilizing effect upon the testicles of rabbits, it was not long before this agent was applied to human beings. The first to apply roentgen ray for menorrhagia was Foveau de Courvelles in 1902, and the first to apply radium for menorrhagia complicating fibroid was Abbe in 1905. Since then numerous men have reported various results with this method of treatment, including Matas, Kelly, Janeway, Hanks, Strauss, Wickam, J. G. Clark and others.

I realize that uterine bleeding is a big subject with numerous etiological factors, and I am going to attempt to discuss it from two angles or causes. 1. Endocrine dysfunction. 2. Benign and malignant neoplasms of the uterus.

ENDOCRINE DYSFUNCTION: 1. At puberty. 2. At the menopause. 3. During the child-bearing period. Under this comes those cases in which no assignable cause can be found. It is known that the corpus luteum has a direct effect upon menstruation, both normal and pathological, and this in turn is probably affected by other internal secretions. The corpus luteum is formed from the Graafian follicle, this being so, then the logical treatment would be directed towards destroying enough of the Graafian follicles to control the hemorrhage. It is known that the ripe follicle is more susceptible to the ray than is the primordial follicle, and if treated with x-ray and radium you should only attempt to inhibit their production. Radiotherapy is

not the treatment of choice in these cases during the child-bearing period or at puberty. An attempt should be made to correct the unbalanced endocrines with organotherapy, if this fails then fall back on radio-therapy to eradicate the hemorrhage. At the menopause, or in women approaching the menopause, when no assignable cause can be found for the hemorrhage, radiotherapy is the treatment of choice, because it will stop such hemorrhages in practically 100% of cases, and it will throw the patient into a menopause that will tax her nervous system less.

REPORT OF CASE: Mrs. G. Age 43, Married. Chief complaint, menorrhagia. She has had two severe hemorrhages in the last six months. Hemoglobin 45%, anemic look, weak. Speculum examination reveals boggy cervix, anemic looking, with patulous os, absolutely no evidence of malignancy. She was given 50 mgms. of radium element intrauterine for 20 hours, screened with 1½ mm. of silver, x-ray over the abdomen in four cross-fire positions for uterus with large square cone. She was seen again in four weeks, and stated that she felt tempted not to come back for inspection as she thought she was well, felt much better, had experienced no symptoms of menopause, hemorrhage had entirely ceased, Hemoglobin 85%. However, to be sure the treatment was repeated.

BENIGN NEOPLASMS OF THE UTERUS: One of the principal neoplasms of the uterus is fibroid, and it is here that radiotherapy offers the most. What the relationship between fibroid and hemorrhage is, is not known whether the tumor that causes the hemorrhage or the ovaries whose overwork probably prompts the development of tumors of this type in their musculature. If all fibroids were sub-mucous then the hemorrhage could be laid at their door, but it is known that some of the worst hemorrhages occur in the intramural or subserous type. Matas says that radiotherapy has reduced his operations for fibroids 60%. Quoting Kelly in *Journal of Surgery, Gynecology and Obstetrics* for October, 1918: "I will state my contentions dogmatically and declare that we have accomplished by radiotherapy: 1. Control of hemorrhage and checking of menstruation. 2. Shrinkage of the tumor, and in some instances disappearance of the tumor. 3. In some cases even after two years, return of the menses, either normal or scanty."

There are three theories as to the cause

of reduction in size of the tumor: 1. An endarteritis is produced which starves the growth. 2. A direct action upon the tumor causing it to degenerate and become replaced by fibrous tissue. 3. An artificial atrophy of the tumor, similar to that produced at the menopause, because you stop the production of Graafian follicles and thus the tumor stops receiving its stimulus for growth. It is known that the ray causes an endarteritis, but a combination of the first and third causes are most probable.

Of the different types of fibroids, the intramural is the one with which the best results are seen, submucous next, and subserous the hardest to get to respond to radiotherapy.

The factors that should be considered in determining the method of treatment are: 1. Age of patient. If under thirty-eight, myomectomy, if possible should be done, but I think if a hysterectomy is necessary then radiotherapy should be tried in this class. In all patients beyond forty years of age radiotherapy should be the method of choice. 2. Size of fibroid. It is the consensus of opinion that those fibroids above the umbilicus should be operated. 3. Condition of the patient. If the hemorrhage has been severe enough to lower the hemoglobin below 40%, radiotherapy should always be the choice, for it will stop these hemorrhages and if the fibroid does not reduce in size, later the patient is in a better condition to withstand the operation, if it is deemed advisable. With complicating organic diseases such as kidney lesions, tuberculosis, diabetes, and other conditions where an operation is contraindicated, this method is strongly favored as the best, as it does not endanger the patient's life.

The results to be expected from radiotherapy are: 1. Cessation of the hemorrhage. Hanks reports ninety-nine percent in one hundred cases. Jones in Surgery, Gynecology and Obstetrics reports control of hemorrhage in ninety percent of cases. 2. Shrinkage of the growth. This is a slow process, and should not be looked for with the first two or three treatments, or as soon as control of hemorrhage is produced. Hanks in Journal of Radiology, reports seventy-one percent without palpable tumors after treatment was completed. 3. Production of the menopause. At the first treatment it is better to tell the patient that her next menstruation may be worse, or there may be an aggravation of the symptoms, an amenorrhoea, without return, or a slight diminution in flow. After

the second treatment there is marked diminution in the flow, a complete amenorrhoea, or no change. After the third treatment there is usually complete amenorrhoea, or the treatment will be ineffective.

TECHNIQUE: This varies as to the result you wish to obtain. If the patient is at the menopause, and you do not fear throwing her into an artificial menopause 50 mgms. of radium element are used intrauterine for from 20-30 hours screened with one millimeter of brass or its equivalent. A series of x-ray treatments are given anteriorly and posteriorly, using from ten to twelve positions in cross-fire effect centering as much as possible over the tumor or uterus. 9½ inch back up, 4 mms. of aluminum filter, 3 milliampere and from eight to twelve minutes time. I have found that I can increase this time with other factors the same up to fifteen minutes before I get the bronzing of the skin seen with a first degree reaction.

REPORT OF CASES: No. 1, Mrs. H. Age 42, mother of nine children, all living. She for the last year has noticed a swelling in her abdomen centrally located which has grown to the size of an infant's head. She is very fleshy, weighing one hundred and seventy-five pounds, height five feet five inches. For the last four months, before first seen, she has had three severe hemorrhages, and has just passed the fourth. She looks anemic, hemoglobin, 30%, menopause has never set in. On speculum examination the cervix was boggy, anemic, and patulous, a curetment was done to rule out malignancy, and a radium applicator containing 50 mgms. of element screened with one millimeter of brass left in for twenty-two hours, x-ray as outlined above was administered. She was seen in six weeks, hemoglobin 85%, feels much better, is doing her own housework for the first time in six months. The tumor is slightly reduced in size. Radium was used twenty-four hours, x-ray repeated, she was seen again in five weeks, the tumor was considerably smaller, menopause had set in, however, without any bad symptoms, she felt like a new woman, hemoglobin 90%, and again the treatment was duplicated. She was told to report again in two months.

No. 2. Mrs. B, age 33 years, has three children, no miscarriages, all children living, youngest seven years of age. She had noticed for the last eighteen months a swelling in her lower abdomen which had grown very much in the last three months, it now is the size of a five months preg-

nancy, at level of umbilicus. Hemoglobin 40%, r. b. c. 2,632,000. It was fully explained to her that a menopause would probably set in, she preferred this to operation. She was given radium intrauterine 50 mgms. for 16½ hours and x-ray only over the fibroid, missing the ovary as much as possible. She was seen in five weeks, felt much better, fibroid materially reduced in size, the treatment was repeated, giving 22 hours of radium, x-ray the same. She was seen in six weeks, her hemoglobin was 90%, she was doing her own housework, and felt much better. The hemorrhage had entirely stopped. The treatment was repeated as the tumor was about two-thirds as large as originally.

MALIGNANT NEOPLASMS OF THE UTERUS:

It is generally conceded that those cases in which the malignancy is local within the uterus should be treated radically by surgery. This does not include cervical malignancy. I believe that these patients should be treated pre-and post-operative with radiotherapy. In borderline cases radiotherapy is the only thing to consider, for it has been proven that surgery only hastens death. I believe that with radium and x-ray you can reach malignant cells farther than with the knife. It is a serious problem to treat these cases even with radiotherapy, for it may stimulate rather than destroy, if the proper dose is not administered. Give all of the x-ray the skin will stand and administer through the uterine canal a lethal dose for cancer cells. It has been shown that carcinoma cells in general will be killed with 80% of the lethal skin dose, then if you can deliver to the tumor cells themselves 95% of the skin dose you can say safely that you are not stimulating the growth. This of course is made difficult owing to the depth of the tumor below the skin, as you can deliver through the abdominal walls only as much x-ray as the skin will stand. By cross-firing much of this is overcome, using eight positions anteriorly and six posteriorly. Administer intrauterine at least 2 gram hours of radium.

What has radiotherapy to offer in treatment of malignancy of the Uterus: 1. Cessation of the discharge; this can be promised in 100% of cases. 2. Alleviation of pain to a certain degree. 3. Prolongation of life, even in inoperable cases and in borderline cases a good chance of cure.

I have one case to report: Mrs. H., age

70; for six months she has been troubled with a discharge that at times was blood-tinged, the uterus is freely movable, on speculum examination a small growth is seen in the cervix, a section was taken, and reported squamous celled carcinoma, a curettage was done and reported adeno-carcinoma. She was given 50 mgms. of radium, intracervically, x-ray posteriorly and anteriorly on Dec. 10th, 1921. On Dec. 25th she was given 20 hours intrauterine, x-ray repeated. On January 26 she was given 26 hours intra-uterine, x-ray as before. On Feb. 18th she was given 30 hours intra-uterine, the cervix was at this time healed, x-ray as before. On March 18 she was given 26 hours intra-uterine, x-ray same. At this time the discharge had stopped, she felt much better, and was sent home to watch herself, if any discharge or pain starts to report at once. It is not known what the outcome will be, time will tell, but I do know that this woman was materially helped with this treatment. Incidentally she had several pre-epitheliomatous lesions on her face that one superficial treatment removed.

ADVANTAGES OF RADIOTHERAPY: 1. The treatment is painless. 2. It takes two or three months and if the results are not good then the patient can be submitted to operation if deemed advisable, even in a better condition than if operated before. If successful the menopause is no more severe than if it had occurred naturally. 4. No mortality—due directly to the treatment, while the operative mortality for fibroids varies from one to four percent, for carcinoma as high as seventy-five percent. 5. The general systemic disturbances following in the wake of surgery are not seen. 6. It is not inconvenient to the patient, she being able to continue her household duties the same as before treatment. 7. In properly selected cases there are no failures

Radiotherapy is still in its infancy, nothing is absolutely known of its action, it is a powerful caustic, an inhibitor, a stimulant, and a destroyer of tissue according to the amount used. There is at present a tendency to produce transformers that will give a ray that rivals the gamma ray of radium. There are twenty-inch gap machines on the market, but at present they are impracticable, the technic is not worked up. I do not believe that a ray will ever be produced with x-ray that will equal the gamma ray of radium either in penetrability or therapeutic effect.

Discussion: DR. A. L. STOCKS, Muskogee.

Dr. Neeley's excellent paper presents the now known facts relative to the value of radiology in uterine fibroids and benign metrorrhagia.

Without any reflection on the physicians present it is a pity to waste so much effort "on the desert air." Most of you never see or are in the slightest way interested in these conditions, while on the other hand the men in the section of medicine and surgery ought to be, and are, vitally interested, and it is to these men that patients first go for counsel.

Facts are, there are many general practitioners, and not a few surgeons who are not familiar with the great advances made in the therapeutics of radiology and thousands of women, many whose hemoglobin is below the line of safety due to the incident metrorrhagia, are being subjected to the dangers of operative interference that could be, as they are being, cured by radiology.

In view of the findings of pathologists that uterine fibroids do not, in any larger percent, degenerate into malignancies it seems to me that the patient is entitled to the information from her surgeon that radiotherapeutics, in competent hands, is well worth considering and while it may render an operation unnecessary, yet the ideals of medicine will have been achieved and in the end no one will be the loser. There are, of course, some cases in which surgery is indicated and will give by far the best results, but the fact remains that the vast majority are amenable to radiotherapeutics and in my judgment the roentgen ray is preferable to radium for the reasons it is slower in its effects and thus the menopause is not precipitated but comes about more as a normal condition. In the large tumors, those reaching up to the umbilicus, yield satisfactorily to roentgen ray while radium would be impracticable. Roentgen ray can be applied without loss of time, inconvenience or discomfort; while placing a sufficient quantity of radium in the uterus and keeping it there the required time is both painful and not without some danger of slough and infection, two fatal cases having been reported from this cause, both in the hands of competent men. On the other hand the dangers of roentgen ray with experienced physicians is negligible.

DR. NEELEY:

There is not very much I wish to add. I want to thank you for the discussion. One thing though and that is, always remember this treatment will not remove all fibroids, it will stop the hemorrhage, but in some cases the fibroid will remain despite every effort to eliminate it with radiotherapy, so, do not promise to remove all fibroids.

SPINAL CORD TUMORS.

ANTONIO D. YOUNG, M. D.,
Oklahoma City, Oklahoma.

For the purpose of this paper all forms of compression of the spinal cord will be considered under the title, "Spinal Cord Tumors." The symptoms produced by compression of the cord are due to pressure on the nerve roots or on the cord substance itself and are caused by new growths, inflammation of the meninges or to vertebral disease. The lesion may be extra-dural, dural or sub-dural and may be situated within or without the medullary substance. In their order of frequency, the parts of the cord affected are, cervical, conus and cauda, lower dorsal, upper dorsal lumbar. (1) The relative frequency of the different forms of tumor is as follows: sarcoma, carcinoma, glioma, endothelioma, tuberculoma, cyst, neurofibroma, adenoma. (2) Tumors of the vertebral column encountered are: myoma, osteoma, enchondroma and cysts. Between the vertebrae and the dura there may arise neuroma, hydatid cysts, tuberculoma and a few others.

The first symptom of a cord tumor is usually sharp, shooting, intense pain distributed along the course of one or more nerves and is spoken of as root symptoms. The pain is felt, of course, in the region of the body supplied by nerves arising from the segment of the cord involved. The pain, at first, is unilateral, extending in a few weeks or months to the other side. Signs of motor irritation may be present, such as twitching and rigidity of groups of muscles followed by signs presaging paralysis; that is, weakness of the muscles below the site of the lesion usually in the legs. Eventually the sphincters become involved, retention of urine occurs, the weakness in the legs increases until complete paralysis is present. This is the usual and typical history of the development of a spinal cord tumor. However, in

a few cases, early pain is absent as are many of the "typical" symptoms. Indeed the symptom group is so baffling as to render a diagnosis extremely difficult. Many patients complain of a girdle sensation and there is usually a hyperesthetic zone just above the area of anesthesia after the latter has become established. The symptoms are variable. (3) Single symptoms cannot be considered characteristic of spinal tumors, but some syndromes are. They are of two kinds; symptoms originating in the spinal endings and symptoms originating in the spine. The relation between the two groups varies strongly, however. In cases in which one group is lacking, the other is the more pronounced.

The lumbar puncture and the x-ray examinations are of value in diagnosis. The pressure of the cerebro-spinal fluid is normal, often subnormal. The fluid is frequently thicker than usual, and is more or less yellow in color. Chemical examination shows that the albumin content is considerably increased, and a microscopical examination shows a similar increase of the cellular elements. In case these symptoms are present, the free circulation of the cerebro-spinal fluid is in some way hindered. Examinations have proved that there is a hindrance between the caudal and the cephalic part of the sub-arachnoid cavity, and that this is usually caused by spinal tumors. The x-ray examination is of value in so far as it renders it possible to exclude or establish other diseases characterized by the same symptoms, *i. e.*, inflammatory processes or tumors in the vertebra. Babinski has insisted on the importance, in cases of compression, of a zone of great hypo-esthesia, and in turn surmounted by a zone of slight hypo-esthesia; the upper and lower limits of this zone of great hypo-esthesia, he claimed, delimit exactly the spinal compression. The author has had occasion to study several such cases, and by the indications outlined, to determine the area of the medullary lesion, as was in some of the cases afterward verified by operation or autopsy. In one of these there was a psammona beneath the pia involving the entire cord at the fifth and part of the sixth dorsal segment; in the second a pachymeningitis involved the roots of the fifth and sixth dorsal nerves on the right, and the sixth, seventh, eighth and ninth on the left; in the third a syphilitic pachymeningitis was compressing the twelfth dorsal and the first lumbar nerves. In each of these the diagnosis was easily made by means of the zone of great hypo-esthesia

above that of massive anesthesia. An operation performed under favorable conditions on such patients is nearly always successful in restoring voluntary movement, and might well be considered in cases of paraplegia where an external compression can be ascertained by this method. Some cases present a hemi-paraplegia known as Brown-Sequard paralysis. This is a paralysis of motion and muscle sense with exaggeration of deep reflexes on the side of the lesion with paralysis of cutaneous sensation, especially of pain and of temperature on the opposite side up to just below an anesthetic band on the side of the lesion. (5) In localizing spinal cord tumors experience has shown they are usually above the location apparently indicated by the disturbances of cutaneous sensation.

Spinal cord tumor is characterized by a slowly progressive course, beginning with pain on one side extending to the other side, followed by motor weakness and disturbance of the sphincters.

CASE REPORTS.

Case No. 1. A man aged forty with symptoms of sciatica for several months, gradually developing weakness of both legs, followed by parasthesia and finally by anesthesia of the legs. The first anesthesia noticed was of the saddle type. He developed weakness of the bladder sphincter. Operation at the Mayo Clinic showed five neurofibromas of the cauda. They were removed but the patient, after a perfect surgical recovery, grew progressively worse and died in about two months of sepsis, originating in the genito-urinary tract.

Case No. 2. A woman, age fifty, who entered University Hospital and was seen by Dr. Fishman during my absence. One and one-half years ago her toes began to drag. The weakness in her legs gradually developed into paralysis, loss of all forms of sensation from the waist down, loss of sphincter control and trophic sores about the hips. Her knee jerks were exaggerated. Babinski sign and ankle clonus were present. There were involuntary muscular contractions of the legs and the hyperesthetic zone showed the lesion to be located beneath the fifth dorsal vertebrae. Operation by Dr. R. M. Howard, January 23rd, 1922, revealed an osteoma of the fifth dorsal vertebra compressing the cord to an extent that constituted practically a division of the cord. At this time, a month after the operation, there has been no improvement in the patient's condition

nor can any improvement be expected because of the extensive damage to the cord.

Case No. 3. A man, age forty-five, who presented the so-called saddle anesthesia with increased knee jerks, ankle clonus and positive Babinski. Operation by Dr. R. M. Howard on the 14th of March, 1921. This revealed a glioma beneath the second lumbar vertebra, which was removed. At this time, eleven months after the operation, there has been some improvement in the movement of the left leg but control of the sphincters has not returned. Since glioma is an infiltrating growth and more or less malignant in type the recovery of this patient is not to be expected.

Case No. 4. A young man with weakness and atrophy of all muscles below the knee, with saddle anesthesia. There was some disturbance of the bladder. The area of anesthesia seemed to point to a lesion of the cauda. Operation by Dr. LeRoy Long on September 16, 1920, revealed a constriction of the lower end of the conus caused by a bony tumor. This patient died of sepsis of the genito-urinary tract two months after the operation.

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SARCOMA OF THE ANTRUM.

Report of a Case

By HOWARD S. BROWNE, M. S., M. D.,
Ponca City, Oklahoma

Tumors of the antrum are not met with in the every day practice of our profession, and it is quite generally agreed that a very early diagnosis is necessary in order to save the life of the patient.

FREQUENCY: Of all the tumors of the antrum reported in the Mayo Clinics for the two and a half years ending in 1920, sarcoma of the antrum occurred in eight out of thirty-three cases, or an average of about twenty-five per cent. Of these, twenty-one were in males, and twelve in females, and fifteen were inoperable and eighteen were operable. Of the eighteen



cases reported treated with cautery and radium, three are dead, two had extensive recurrences, and ten had no recurrence in a period of eight to twenty-eight months. (1)

SYMPTOMS: The diagnosis of malignancy of the antrum is not usually made until it practically becomes self-evident from the bulging of the cheek or eye, the soft palate, or the involvement of the nose. On account of the similarity of symptoms it is apt to be mistaken for acute antrum infection. The early symptom is pain. This may be continuous, or may take the form of a burning or itching sensation from irritation of the fifth nerve. Later the pain is dull, may be referred to the teeth, and is usually relieved when the tumor perforates the wall of the antrum into the mouth, cheek, orbit or nasal cavity. There may be nasal obstruction and an increased foul nasal discharge. The antrum is dark on transillumination. Exophthalmos of the side affected may occur. There also may be visual disturbances.

TREATMENT: Resection of the jaw with some sort of plastic operation has been practiced. This has given way to cautery with a red-hot soldering iron, followed by radium applications. In the more advanced cases radium alone is used. On account of the early metastasis to the lymph glands of the neck and to the lungs, it is important that the treatment should

(1) See malignant tumors of the antrum by New, in Mayo Clinics for 1920.

begin early, which means of course that the diagnosis must be made early, otherwise the case is hopeless.

REPORT OF A CASE: Miss Viola B., aged 16 years came to me Dec. 6, 1921, complaining of visual disturbances, inability to study long without pain in the eyes and headache. She also mentioned having had frequent colds in the head, and some nasal obstruction. She had had the usual diseases of children including measles, mumps, whooping cough, scarlet fever and recurring attacks of tonsilitis. She was a well nourished, well developed girl and weighed about 150 pounds.

Examination revealed large hypertrophic turbinates, tonsils infected, teeth in good condition. Under homatropine refraction the eyes showed one-half dioptre of astigmatism, the vision being brought up from 18-20 to 30-20, with the correcting lens. When told that she had infected tonsils and adenoids, her people suggested that I remove them which I did the following day under ether, and she made an uneventful recovery and returned to school in about a week.

On the 19th of January, 1922, she returned saying that she could not wear her glasses and could see better without them. Her vision at this time tested 30-20, each eye. Thinking that her tonsil operation had improved her vision, I suggested that she try getting along without her glasses. (I found out later that she went to an optician for a refraction with unsatisfactory results.

On the 28th of February, I was called in consultation to see this girl. For the past two weeks she had been treated by her family physician for pain in the left orbital region, which extended over the orbit, and the whole left side of her face. The pain was so severe that opiates did not entirely relieve her. The evening before I saw her, she said she felt something break, the pain was relieved, and a very marked exophthalmos of the left eye developed. Examination revealed the left eye bulging, no redness, no increased tension of the ball, edema of the lids, pus coming from the left nostril copiously, and darkness of the antrum on transillumination. Thinking I had a case of acute antrum infection which had ruptured through the orbital plate and the patient getting no better under conservative treatment, I removed her to the hospital on March 8th.

On the 16th of March, there was a definite tumor mass presenting from the left nostril which looked like a boggy in-

ferior turbinate, greyish in appearance, over which copious discharge of pus had been flowing since I first saw the case. On the advice of a nose and throat man from a neighboring city, I removed all of the mass I could conveniently, with scissors and snare under local anaesthesia. Hemorrhage was very free, but was stopped in about fifteen minutes by pack saturated with thromboplastin, and it was not necessary to pack the nose to control further bleeding. There was very little reaction from this operation, though the temperature registered 99.2-5 per rectum, the first time the patient had had temperature since coming to the hospital. The blood count at this time was 14,000 whites, red, normal. For a week the patient rested well, the temperature varying from 98 to 100, and the pulse 80 to 90.

On the 27th, a mass was again found presenting at the orifice of the left nostril, and under local anesthesia I removed this and sent the specimens to Dr. L. A. Turley for pathological examination. Following the operation, there was a tremendous reaction, the temperature going to 104 the following morning with the pulse 140. The reaction continued during the day and night and several hypos of digitalin, gr. 1-100 were given. The patient continued to run a temperature varying from 99 to 102 until discharged from the hospital April 9th to go to Mayo Clinic for further treatment.

A report from Dr. Turley reads as follows: "There is a double condition present, one is a suppurative process and the other an alveolar sarcoma of a very young cell type. A report from the Mayo clinic stated that they found a huge sarcoma of the left antrum. Radium was introduced into the antrum and applied to the outside of the cheek. The patient returned home apparently in good condition after the trip. She is up and about the house, feels good and eats well, has no pain, and the exophthalmos has subsided some. There is considerable discharge from the left nostril, and an edematous swelling under the left eye. Further treatment will depend upon the results obtained from the radium.

CONCLUSIONS: Sarcoma of the antrum is rather rare and is liable to be confused with antrum infection on account of the similarity of symptoms.

Early diagnosis is imperative in order to get the most favorable results from treatment.

The prognosis is grave in all cases on account of the tendency to metastasize.

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Local news of possible interest to the medical profession, notes on removals, changes in address, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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EDITORIAL

PERTINENT POINTS ABOUT CANCER

Statistics seem to indicate an increase in the number of cancer patients during the last few years. Be that as it may, it is certainly and tragically true that cancer is today, in many respects, the biggest problem before the medical profession.

Roughly and practically we may think of cancer as being either a carcinoma or a sarcoma.

Carcinoma is a cancer that involves epithelial structures—structures that take their origin from epiblastic or hypoblastic tissue. Thus, we have carcinoma of the skin, the mammary glands, the epithelial structures of the mouth, the nasopharynx, and so on, as examples of the

blastogenic origin, while carcinoma of the intestinal tract, the pancreas, the liver, and so on, is in connection with tissues of hypoblastic origin.

The essential cause of carcinoma is not known, but we do know that this type of cancer has a predilection for certain parts of the body; that the majority (but by no means all) of the cases occur after 40 years of age; that trauma and irritation frequently act as exciting causes and I believe that it is pretty clear that heredity may play a much more important role than it is given credit for by many writers.

In the beginning carcinoma is usually painless. Often, if the surface structures are involved, it may be a rapidly growing hard lump without pain for a comparatively long time, the lump being discovered by accident. This absence of pain is probably a misfortune for the reason that the patient hesitates about having an examination. The physician, at least, should clearly understand that the absence of pain in the beginning is no indication that the tumor is not a cancer. In fact, in the case of a hard rapidly growing tumor, the absence of pain may have value on the other side of the question. To me it is always a suspicious circumstance.

In carcinoma, there is extension by way of the lymphatics. This means that carcinomatous cells are strung along the lymphatic vessels until the lymphatic glands are reached when they pile up and produce new carcinomata. Therefore in a tumor of the breast do not wait for "kernels" in the arm pits before taking active steps to relieve the patient. When there are "kernels" in the arm pit it means that another cancerous focus has developed, and that between the original tumor in the breast and the new tumor or tumors ("kernels") in the arm pit, there are cancer cells scattered throughout the lymphatic vessels.

In the minds of many lay people, there is an unfortunate impression that cancer is always characterized by sloughing—that there must be an open sore. Of course no physician with a modicum of information has such a conception of cancer, but the profession can render a service by constantly calling attention to this error.

Sarcoma is a cancer involving the connective tissue or structures. It is made up of connective tissue cells. It may occur in any structure in which there is connective tissue—bone, fascia, ligaments, skin, muscles, uterus, liver, intestines, and so on. It spreads by way of the blood stream.

While the majority of the carcinomata develop after 40 years, there are a vast number of the sarcomata before that age—probably a large majority. Many cases are found in the very young.

Like carcinoma, sarcoma is usually free from pain in the early period of its development. Painless tumors about the neck, for instance, if they have grown rapidly, should be looked upon with the greatest suspicion.

In the case of every cancer, whether carcinoma or sarcoma, the lesion is at first local—but, unfortunately in many cases, especially in the sarcomata, metastasis takes place early—and too frequently it is a distant metastasis because it spreads by way of the blood stream. This does not, however, change the important fact that in every cancer, it matters not of what variety, the lesion is at first, and for a variable time, a local lesion, and if it is removed in its entirety, by either surgery or radioactive agents, as may seem to be appropriate, the patient is cured of his cancer. In my judgment, the most important duty resting upon the shoulders of the medical profession today in connection with this dark and gloomy subject is to see to it that radical steps be taken *at once* for the definite removal of every suspicious new growth.

LEROY LONG.

A STATEMENT BY THE COUNCIL TO OUR MEMBERSHIP, WHEN THE COUNCIL IS A COURT.

Due to belief that possibly there still remains some doubt and misunderstanding in the minds of some of our members as to principles and procedure governing the Council in cases where it is called, by appeal from a county society, to act as a court of appeal, which function is very similar to a court of appeals of our government; it has been determined to issue this statement as the general idea and opinions of the Council anent its multiple duties, when it acts as a court for the member appealing.

The member is reminded at the outset that there is a very definite process governing county societies and all members in cases brought to trial. No essential can be omitted in the trial of a case. The rules governing are so simple that confusion seems hardly possible, if the law is first carefully read, its demands applied exactly, step by step. While in many cases trials are very loosely carried out, it should al-

ways be kept in mind that any given case may be the subject of appeal, the facts as occurring critically reviewed, and, especially any point omission of which has actually or by a reasonable possibility may have worked an injustice to the member, may be carefully weighed, as it should be, for under no circumstances is injustice or acts impelled by prejudice permissible, so, throughout the trial it should be the aim of every individual to see to it that nothing is done which might be construed as injustice to anyone regardless of the opinions or wishes impelling one. Fair dealing in these matters is so plainly indicated that any other course is inexcusable. Every attempt should be made and that danger constantly kept uppermost, to the end that prejudice be suppressed. Incidental to injection of prejudice into these trials, the Council has had to observe with humiliation, the role occupied by some of our members, too low and petty to be passed over as produced by personal feelings. The situation occupied in some instances is more than amazing; one cannot help but speculate on the means inducing the states of minds noted. Pettiness, smallness, low ideals or none,—in fact, proper description is difficult—the keynote of it all, however, may be stated as a lack of generosity, a state so ignoble, that one wonders how that lowly depth could be reached.

No man, vitally interested in a case should forget duty by consenting to sit as juror to the man he accuses. Every instinct of honorable practice demands that one finding himself so situated, should promptly eliminate himself from the case, insofar, as forming the verdict. Any other course than that cannot be condoned. Injection of pettiness, of small obstacles, sharp practice are so far from the ideals of a true physician that when they crop out in the evidence submitted on appeal, the Council acutely feels the ignoble part played, and noting those things, more than any other, impels this message. We ask our members to remember the Golden Rule in these matters. Nothing is so pitiable as the activities of the small "cliques" existing in our midst to a degree which reflects upon our good name. In some instances, any semblance of a fair trial, impartial, judicial, calm decision, all the due of the accused, is impossible. Due to the vice of prejudice, it is impossible for some mentalities to impute any but the most impossible, lowly interpretation upon the acts of the accused. Frankly we would feel more than ashamed to quote in this Jour-

nal some of the charges brought by a member against another. It is regrettable that the accuser is devoid of the principle of introspection and that some one, as a matter of generosity and lending a helping hand, cannot take men of such prejudices aside and point out to them the example and figure presented. This should be done regardless of the enmity it would produce. Certainly the immature school-boy would not be found occupying such role, that the lack of principle probably extends into all other things makes it a serious matter, for it is well known that we are largely interpreted and valued by our acts *en masse*. The inferiority of one is applied to all others.

The Council feels it to be a clear duty to protest against one practice or phase already noted incident to appeals. That is the unpardonable "electioneering," attempts to use influence, "lobbying" to the jury. That body is nothing if not a court. Though not sworn, the member not applying the most sacred rule in all his acts, is obviously unfitted for his task. That the same rule applied to a court should be applied to the Council, is the only possible course, so its members by no manner or means should be subject to attempts to influence its decision, to prejudge the case; no taint of chicanery, low practice, or questionable act should ever be part of its record.

A charitable and generous motive is credited to most of these messengers, but as the practice has grown to alarming degree, it is the only course permissible to have all now note the principles which should govern and attach to the Council's difficult, and thankless task, a task every member undertakes with regret but with a sense of duty, demanding that it be performed in the only possible manner, with the highest honor throughout, with only noble and fair ideals as guides.

After this notice the Council will feel the right of honest resentment at improper attempts to influence a just decision. It is earnestly recommended that each county society, as well as the members thereof, take up the study and interpretation of the few simple regulations embraced in the Constitution and By-Laws of the State Association. We feel that this need is most urgent. The suggestion arises from many circumstances indicating a total lack of knowledge of the rules. As an instance of this lack of appreciation, one society, apparently at the behest of another, passed resolutions voicing its belief and sugges-

tion to the Council, that the "County Society should be the sole judge of the qualifications of membership." What they wished to convey was their opinion that the county society should be supreme as to its affairs, that its acts could never be wrong or improper, that it could do no injustice. In the first place the suggestion overlooks one insurmountable obstacle. Whether we would have it so or not, our acts are reviewable. A member may ask a civil court to review the acts of his society, to undo a wrong if perpetrated; in other words we must play the game fairly, and to be sure we do, appeals have been arranged. The resolution to the Council also failed to take cognizance of the very definite machinery created for the purpose of serving the ends of justice. The State Council, is hardly a supreme court, it is more nearly, similar to the United States District Courts of Appeal, such as we have at St. Paul, St. Louis, etc. After the Council acts, the entire matter may be carried still higher, to the Judicial Council of the A. M. A. This lengthy explanation is inserted here to have it clearly appreciated that we have some semblance of organized law, that it must be properly executed, but above all things it must have the respect of the members, without which its acts are worse than useless. With the explanation too, the idea should be conveyed that in every action, where the county society sits for trial, the exact rule should apply in all things, accurate, multiple records should be kept, every move should be made part of the record so that should any part be subject to question or criticism, months, even years after the occurrence, those called upon to adjudicate the matter will have a clear, intelligent record of the case.

The Council does not feel it to be just or the part of a generous regard, to be the object of criticism, suspicion and censure merely because it decides a matter contrary to the wishes of others. That it is a body wholly without personal interest in the appeals brought in, should be sufficient to cause any member, himself a party of interest, often taking most active stand, to pause in his hurried injustice by criticism of a body having no interest whatever, therefore, in far better position to arrive at the proper verdict. A due consideration of all these facts should act as prohibition of unfair criticism. Criticism under the conditions existing is a severe reflection on the unjust critic. He unconsciously holds himself before us as one unfitted by bias and prejudice to the extent that things per-

fectly clear to all others are lost to his jaundiced view. Finally, criticism being the only stipend allotted to the Council it is felt that it should be constructive and worth while; we have no time or patience for pettiness and meanness. We ask the critic to investigate carefully his case with impartial, unprejudiced eyes, before perpetrating injustice.

ADVERTISING, ETHICAL AND OTHERWISE.

Through no desire or activity on our part and despite repeated protest that we are neither qualified or desirous of being classed as an authority, expert or arbiter on questions of ethics. We, nevertheless are constantly recipient of communications having for subject matter the problem of ethical and medical advertising. Practically all of the correspondents demand our opinion, sometimes going further than that by demanding that we use some sort of mysterious corrective power supposed inherent and abiding with us.

Once more we protest and ask that we be not so classed, but that we be considered merely as "one of the boys," holding no right or privilege superior to the rank and file of our membership. We will undertake, with respect to the questions involved, however, to state as nearly as can be, what we believe to be the proper attitude, the honest, good-faith position the ethical and high principled physician should hold in the matter. It should be agreed to in advance that no inflexible rule is possible of adoption and that means that there are cases and situations demanding treatment diametrically opposed to what is considered good form as a rule.

One of the most difficult and vexatious problems before us today and one which must necessarily increase with time, is what limits should be permitted physicians who are united by combinations known as "clinics," "hospital associations," etc. These combinations maintain very complete and efficient organizations, as a rule, having ability to cover thoroughly every need and demand made upon them by the individual patient. As organizations they have entered the advertising field of medical journalism and to that step it seems that there can be no valid criticism so long as their efforts are directed to the physician having cases which he must refer for aid he is unable to extend. In some instances, probably too many, however, cer-

tain units of the organizations have gone beyond the limits of propriety and in their zeal acted as partisans or "boosters" to such a degree that the criticism and wrath of medical colleagues has been justly aroused. Admitting the difficulty of the physician himself as interpreter of the exact course as to propriety and ethical behaviour in many cases, it is most natural that the lay employee can not be expected to follow the proper course, even if he is inclined to do so, which often he is not, but is found cleaving as closely to the line of impropriety and unethical behaviour as he thinks he may. There is no question but what the proper course of every one connected with such organization to follow is that of most discreet silence when it comes to discussing any phase of the work. No one should make any statement which the punctilious physician member of the combination would not openly make and sponsor.

Another vexatious phase, one sure to cause trouble in the future, is the unwarranted and inexcusable custom lately adopted by certain "small-town" hospital organizations by which they publish or influence publication, of lists of patients recently "operated upon at So and So Hospital." In the first place the practice borders on mountebank tactics; it appeals instantly to the refined as impossible practice, it brands the perpetrator as of unenviable grade in the scale of professional attainment, and in certain cases it is nothing more or less than dishonest practice. The plea that it is not the individual physician connected with the hospital, but the hospital itself doing the advertising is unacceptable as explaining and condoning the practice from any viewpoint. The injustice of this class of impropriety lies in the fact that it advertises and gives supposed preferment to a few individuals only. By no means may other physicians, equally or better qualified professionally participate in such advantage, if indeed it is an advantage. The practice at once places the beneficiaries in a position of advantage which cannot be acquired by others in the same vicinity. Any maneuver or activity giving preferment or monopolistic position to the few and which cannot be enjoyed by all, is an impropriety to say the least. That it is rapidly coming to the time where a reckoning must be had goes without saying. It seems to be the safest plan or rule that any action or practice of the individual not generally practiced by his colleagues in that vicinity should be

avoided and condemned. Pages may be written of the many factors entering into the matter, but that is not necessary. We cannot neglect to again suggest that the honorable physician has only one course open to him. That course is that by which, as nearly as can be, he adopts and follows in good faith the Golden Rule. None of us should do that which most of us may not do or cannot do. In this connection we desire to take notice of one saying or excuse, worn threadbare, and which never fails to raise a protest in our minds, if it is not openly expressed. This refers to the statement, "I am an upsetter of tradition." If he for some wrong-doing he would forget the are few "upsetters" among us.

CANCER, A NEGLECTED SUBJECT.

The diseases of Syphilis and Tuberculosis are perhaps the most common ones which are now being studied and discussed throughout the world, both by physicians and the laity. Public Boards of Health have been putting out intelligent, educational publications upon the subject of tuberculosis and syphilis and maintaining bureaus of public speakers for the past ten or fifteen years. The success of this work is manifest on every hand, in the Anti-Tuberculosis Societies, Boards of Public Welfare, Free Clinics, etc. Hospitals for the diagnosis and treatment of tuberculosis are now maintained by public taxation at various places within our own state and within many other states.

This education is further manifest in the form of organization of the school children for knowledge of the importance of fresh air and the eating of a properly balanced and sustaining diet. This work has indeed been of inestimable value to the present as well as future generations and is deserving of the highest encouragement and praise.

However, the subject of cancer which disease between the ages of thirty and forty almost parallels syphilis and tuberculosis as a death dealing disease and after the age of forty, outstrips each in the race, has been neglected until the past few years. There might be offered various reasons for this neglect though perhaps the most acceptable one is because the exact etiology of this disease yet remains undiscovered. This lack of knowledge has perhaps caused a timidity in our giving out a larger number of facts which are proven and are of common knowledge among the profession

who have tried to keep themselves informed.

In the year of 1913 in the city of New York, a group of Gynecologists not to be discouraged by this lack of knowledge, organized the American Society for the Control of Cancer and at once began to lay plans for a nation-wide campaign. On account of the World War this work was more or less neglected. Soon after the close of war, organization work was again begun and has been carried forward in spite of the financial handicap of voluntary contributions, until today practically every state, even down to districts, is well organized and is doing effective work.

The work in our own state was not attempted until late last year. During the latter three or four months of 1921, thirty-two addresses before medical bodies were given and thirty-four addresses before mixed audiences were held, with a total attendance of more than 22,000. There were also 3,000 pieces of educational literature distributed. Reports have already been coming from every community where work was done that many were presenting themselves for diagnosis of primary lesions which otherwise might have been neglected until metastasis had occurred and all hope of a cure had passed.

As State Chairman, Committee for Study and Control of Cancer, I wish to again express my sincere thanks for the generous response and assistance which was given to this work during last year. Also to remind you that some time during October or November of this year another week of education shall be attempted. I am hereby earnestly soliciting volunteers for district or local chairmen, lecturers and organizers of free diagnostic clinics for suspects in every city or hamlet within the state. I am practically assured of one or more picture films, "Reward of Courage,"—a touching, yet fascinating story, depicting ignorance of the laity, the shrewdness of quackery and the rescue by intelligence in a case of cancer. This film is from the parent headquarters, New York City, and is made possible by one good benefactor. It was prepared for and under the supervision of the American Society for the Control of Cancer and can be obtained at a small expense for our use during our fall campaign. We shall have the use of this film for only one week, therefore can show it only in a few selected places where the largest members may be gathered.

This, with other information upon the prevalence of cancer, the importance of its

early diagnosis and the recognized methods of treatment, our work for this cause cannot be measured by the time and small expense incurred. We are humanitarians as well as physicians, we belong to one of the noblest of professions and must give ourselves unselfishly to the work which shall save thousands of unnecessary suffering and death.

EVERETT S. LAIN,
Patterson Bldg. Oklahoma City, Okla.

Editorial Notes—Personal and General

Dr. W. H. Campbell, Hickory, has located at Wilson.

Dr. LeRoy Bonnell, Chickasha, attended the National Homeopathic meeting, Chicago, in June.

Dr. W. W. Gill, Watonga, accompanied by his family, visited the cool hills of Arkansas in July.

Dr. J. H. Cantrell, Carnegie, successfully underwent an operation on account of appendicitis in June.

Carter County's Tuberculosis Hospital will be erected soon if plans recently formulated in Ardmore are carried out.

Dr. F. R. Buchanan, Watonga, is one of the latest victims to report robbery of his office, the thief doing considerable damage.

Dr. W. H. Cook, Chickasha, is a recent victim of the office thief. The losses were an electric fan and \$150.00 worth of stamps.

Dr. E. A. Leisure and **Dr. R. H. Harper**, Afton, visited St. Louis in June, where Dr. Leisure underwent hospitalization and treatment.

Dr. Jim Patterson, Woodward, is taking the best of all vacations by means of a hunting trip with a party of friends in Western New Mexico.

Dr. T. F. Harrison, formerly of Wewoka, has located in Muskogee, with offices in the Barnes Building. He will specialize in the treatment of rectal diseases.

Dr. Williamson Haley Rogers and **Miss Juanita Tidmore**, Wilson, were married in Ardmore June 19th. They departed immediately for their new home in Wilson.

Dr. R. I. Allen, Nowata, recently announced that he would move to Bristow to make his home for the future. He leaves a large circle of friends in his old location.

Dr. and Mrs. G. Garabedian, Tulsa, recently had a narrow escape from death by reason of botulism, the condition thought to be due to infection by eating poisonous olives.

Dr. Herman E. Stecher, Supply, has had the unanimous endorsement of the Woodward County Medical Society, in his race for the democratic nomination for the office of Commissioner of Charities and Corrections, which endorsement will be found in our June issue, page 209.

Dr. F. L. Patterson, Woodward, chief of the eye, ear, nose and throat department of the Woodward Hospital, is in Chicago, where he will spend a month with Dr. Jos. A. Clark.

Dr. J. Hutchings White, Muskogee, was one of the state's fortunate in being able to make the trip to San Francisco as an attendant at the meetings held by the Rotary and Shriners organizations.

Dr. W. C. Graves, McAlester, is asking his professional friends to give their vote and aid to Hon. Robert Higgins, McAlester, candidate before the Democratic primaries for the office of Lieutenant-Governor.

Dr. Leo Starry, Oklahoma City, and **Miss Maree Patch**, Colorado Springs, were married in that city, at the home of the bride's parents, Mr. and Mrs. A. H. Patch, June twenty-first. They will make their home in Oklahoma City.

Dr. W. H. Rogers, Wilson, and **Miss Juanita Tidmore** of Abilene, Texas, were married in Abilene June 12th. The bride is the daughter of a physician, Dr. Tidmore, who formerly lived at Wilson, but later located at Abilene.

Dr. F. B. Fite, Muskogee, tendered to scores of his friends, his "barbecue," an annual custom established some years ago. The affair was staged at his summer home on the Illinois River, fifty miles east of Muskogee. Scores of invited guests were present.

Drs. L. J. Moorman and **J. M. Byrum**, Oklahoma City and Shawnee, respectively, delegates from the State Association to the St. Louis meeting, A. M. A., both had the misfortune by reason of sudden illness arising in their families to be deprived of attendance at the meeting.

Newkirk's physicians executed their first school eye, ear, nose and throat clinic June 22nd. Drs. H. O. Gowey, H. C. Schenck, A. W. Hazen and A. V. Decker were physicians contributing their skill to its success. Twenty-seven operations were performed, principally tonsillectomies and adenoid removals.

Dr. Benj. Skinner, Pawhuska, who for many years has practiced in that city, recently announced the sale of his property to Dr. C. F. Gilbert, formerly of Savannah, Tenn. Dr. Skinner will move to California, where he will make his home. Commending his successor very highly as a capable man, he bespeaks for him a kind reception.

The White Cap is the name of a newsy little, thirty-two page quarterly publication, issued for the first time July, 1922, by Dr. and Mrs. Walter Hardy, of the Hardy Sanitarium, Ardmore. It has for object the betterment of the nursing profession of Oklahoma. The helmsmen of this publication are so well known as to ability and professional fitness in our State that it is not necessary to bespeak for the publication a cordial welcome to the ranks of medical publications.

Dr. J. Winter Brown, Tulsa, successfully underwent an operation at the hands of Dr. Harvey Cushing, Boston, the operation confirming the previously made clinical diagnosis of brain tumor. The telegram to Mrs. Brown stated, however, that the condition of Dr. Brown was still very serious. The Tulsa County Medical Society responded in most generous manner to the appeal to aid Mrs. Brown financially. At last report \$1,020.00 had been raised and turned over to Dr. Brown.

Dr. Geo. A. Boyle, Enid, repeating his maneuver of several years past, arouses our envy by announcement of his impending departure for the cool reaches of the great northwest, insinuating his irritating suggestions as to the number and size of trout, the varied attractions otherwise, until the reader is filled with honest indignation on the lack of consideration of some people. They just simply don't think about the unfortunate other fellow, forced to remain basking in the August sunshine offered by Oklahoma.

Muskogee's Soldier Hospital, according to announcement of the Hospital Commission, will have new buildings to cost approximately \$150,000. They will be a two-story brick vocational training building, five duplex bungalows, a one-story nurses home and a two-story house to be the home of the medical officer in charge. It was also decided to so complete the roof of the main building that a roof garden may be constructed at a later date.

Dr. W. E. Van Cleave, Superintendent of the Federal Choctaw Tuberculosis Sanitarium at Talihina is reaping the reward of his energy and foresight in making a plea for sufficient dairy plant for his hospital. Awards have just been made to various contractors to build a completely equipped dairy barn, which, when completed will cost \$5,000.00. The barn will be 36 feet wide! 54 feet long and properly provide for 12 cows. This herd, Dr. Van Cleave expects to increase from time to time. Only pure blooded Holstein are considered.

Tulsa and Oklahoma City papers, for that matter, all others who express opinion on the matter, are a unit in protest against the sending of ex-soldier patients outside of the State for treatment, when it is claimed that the beds created by the last legislature are not yet used to capacity, by any means. This protest is most natural and correctly based. Certainly there can be no good reason for sending an Oklahoman to the parched plains of Texas when he has at his door adequate hospital facilities and men of known efficiency and ability to minister to his means.

Ottawa County Medical Society, July 6th, adopted resolutions, which they circulated over the State asking support for Dr. W. L. McWilliams, Miami, candidate before the Republican primaries for one of the three vacancies to be filled as Corporation Commissioner. The resolution, unanimously adopted, expressed the highest degree of confidence in Dr. McWilliams as a physician and citizen, who, as is well known, has held the position of leadership in the upbuilding of northeastern Oklahoma since he was one of its earliest pioneers. The Society voices its belief that their candidate is worthy of support from all, regardless of party affiliation, advancing that idea as explanatory to what they anticipate, will be taken as an unusual action on part of a medical organization.

Dr. A. H. Culp, Beggs, as previously announced in this Journal, is on the job covering Okmulgee County with a fine toothed comb for voters to give him a seat on the Democratic side of the House in the next legislature. The Journal unhesitatingly commends Dr. Culp to those who may not know him well or only in a perfunctory way, as a man of the highest personal worth, possessed with unusual common sense, which bolstered with years of experience on the

very active stage of life in and among environments making for the greatest success ever known, all of which gives him an insight to the problems of the day, not known to the general average of our profession. We feel that it is justified to say of him that his characteristics of sterling honesty, moral firmness of the degree not to be frivolously swerved by the hysteria of the passing hour, experience in many affairs of the day, in which he has left the mark of his personal and professional success, a broad and liberal view and aspect to those who do not always accept his viewpoint, tolerance to the lapses of the other fellow, these and many more, make him unusually fit to speak for his country. We wish him every success.

NEW BOOKS.

THE SURGICAL CLINICS OF NORTH AMERICA.

(San Francisco Number)

The Surgical Clinics of North America (issued serially, one number every other month). Volume II, Number 11 (San Francisco Number), 259 pages, with 112 illustrations. Per clinic year (February, 1922, to December, 1922). Paper, \$12.00 net; cloth, \$16.00 net. Philadelphia and London. W. B. Saunders Company.

This issue is San Francisco's offer, medically speaking, of its best efforts. It is not surprising, therefore, to note among the authors, names which in the years gone by made California to its state of greatness and magnificence. California in offering anything good would instinctively turn to a Huntington, a Terry, to Ely, to many others of equal prestige and worth, so we find them here, with Frank W. Lynch, Saxton Pope and others of like ability.

Dr. J. H. Woolsey, University of California, presents a clinic with "Traumatic Fracture of the Mandible" and "Anthrax Pustule." Dr. Edwin L. Bartlett's clinic shows "Tumor of the Scapula;" "Bone-Cyst of the Humerus" and a case presenting clinical doubts incident to a breast tumor. There are many others covering a wide range of clinical offerings, the book in its entirety maintaining its usual high degree of ability.

KERATODERMIA BLENNORRHAGICA.

Edward C. Gager, St. Paul (Journal A. M. A., April 1, 1922), reports the case of a man, aged 41, who had acute gonorrhea urethritis, balanitis, myocarditis, arthritis of both knees and ankles, and a general adenopathy, with the glans penis and prepuce reddened and hyperkeratotic, and an eruption which began as vesicles which rapidly became pustules. Smears from the pustules on the skin as well as from the urethra contained extracellular, gram-negative diplococci; pus cells were very numerous. The eruption was widely distributed, bilateral and tended to be symmetrical. The distribution was grouped, although there were scattered lesions on all parts of the body. There were groups, several confluent, on the buttocks, thighs, legs, feet, arms and forearms. The course of the eruption was prolonged. At the end of three months, the eruption had healed entirely; but it was six months before the arthritis had cleared up, and the patient had a prolonged convalescence.

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THE PLACENTA; WITH SPECIAL REFERENCE TO MANAGEMENT OF THIRD STAGE OF LABOR.*

J. WINTER BROWN, Ph. B., M. D.,
Tulsa, Oklahoma

The formation of the placenta is begun soon after the fertilized ovum is imbedded in the site of future development. This, as you know, is usually the uterus, but in ectopic gestation may be anywhere from the ovary to the uterus. According to Williams, it is formed by the union of the chorion frondosum and the decidua basalis. Therefore, it is composed of both foetal and maternal tissue. It develops very rapidly, and during most of the first three and a half months of pregnancy exceeds the weight of the foetus. As to the further development of the placenta, I need not spend time on it here, as it is given in any good text book on Obstetrics.

The function of the placenta is interesting to all. It contains both foetal and maternal blood, which do not intermingle, but are in close apposition, being kept separate by a very thin wall through which substance may pass, after being radically changed by the chorionic epithelium. Through it the foetus breathes, and receives most of its nutrition, as well as certain substances being thrown off.

It is proven that certain diseases may be transmitted through the placenta, but it is probably not common. The organisms of typhoid fever are perhaps the most common.

I remember of a pregnant woman, who had smallpox about the seventh month of gestation, being delivered, shortly after she recovered, of a dead foetus which was literally covered with typical smallpox marks. I delivered a Chinese woman at full term of a dead baby. The woman had just recovered from a severe case of Asiatic cholera. The baby had been dead several days and death was likely caused by the toxins from the disease.

We who practice obstetrics have more concern about the placenta as we meet it in pathological conditions and in the third stage of labor. We meet the placenta in a very intimate way in all our placenta previa. The placenta in normal cases is usually implanted on the anterior or posterior wall of the uterus, occasionally on the lateral wall, and high enough so the lower margin does not come in contact with the internal os. In placenta previa, we have the condition where the internal os is partially or wholly covered by the placenta. I do not know the exact cause, but the two main theories are, multiparity and endometritis. I wish to cite a case which does not appear to come under either of these.

Mrs. H., age 23. First pregnancy. Family and personal history negative; menstrual history normal, pelvic measurements normal. Blood pressure, 115-75; expected date of delivery, February 24, 1922. Felt fine during all of gestation. On February 5th woke up about 3:00 a. m. and found she was flowing. Flowing stopped by morning. On February 7th, about 8:00 a. m., had another hemorrhage, and started in labor. The flowing soon stopped. I did a vaginal examination at 11:00 a. m., and found her two fingers dilated with a large thick edge of placenta protruding partly through the cervix; the placenta being posteriorly situated. Owing to placenta being very thick and located posteriorly the head could not engage. Since the baby was very active, with good foetal heart, and seemed near or very near maturity, continued pain with no engagement, patient being primipara, good sized baby, and both parents very anxious for a living child, after consultation we decided on doing a section. A well-developed eight-pound boy was delivered, and both mother and baby got along fine. Here we have the unusual case of a placenta previa literalis in a young primipara, being unable to find any cause for it. I shall not dwell further on the placenta previa here, as the subject deserves a paper to itself.

*Read before the section on Obstetrics and Pediatrics of Oklahoma State Medical Meeting, Oklahoma City, Oklahoma, May, 1922.

Another condition which causes the obstetrician a lot of worry is *abruptio placentae*. It, too, should be a paper in itself, therefore I shall not attempt to discuss it here.

THIRD STAGE OF LABOR.

The third stage of labor extends from the time the child is born until the placenta is delivered. This may be anywhere from a few seconds to several hours, but is usually under a half hour. It has always been more or less of a problem just how to get the after-birth. Take for instance, the Chinese, who knows nothing about asepsis, and where they only have some old woman care for the patient. If the placenta does not come, it causes a good deal of worry. One method they use is to have the patient chew her hair. The hair is combed in braids and she is made to chew this hair. As it is crammed into the mouth it tickles the throat and usually causes her to gag and vomit. As you know, this straining exerts forces on the uterus by increasing abdominal pressure. Usually out comes the placenta and the hair gets the credit for it. If it does not come this way, they use traction on cord, which sometimes breaks off, and they trust to nature that the placenta may be delivered sometime, and the patient not die. De Lee makes a very remarkable statement, that is, that more women die from accidents of the third stage of labor than during the other two combined.

As the third stage of labor proceeds we must watch very carefully for hemorrhage, both external and concealed. I believe it is a good practice to give one c. c. of pituitrin at the beginning of third stage in all cases. This will be discussed later. I am convinced that we as a rule manipulate the uterus too much before the placenta is separated. It is best to get a Schultz separation and delivery of placenta. I believe much handling of fundus before placenta is separated causes a Duncan separation and delivery; therefore, do not get in a rush to deliver the placenta, but palpate the uterus through the abdominal wall, only enough to make sure there is no concealed hemorrhage.

THE MECHANISM OF THE SEPARATION AND DELIVERY OF THE PLACENTA.

As the child is delivered the uterus contracts and causes a break in the continuity of the uterus and placenta. The placenta being more adherent around the margin, this break is usually near the center; and

the blood collecting in this break, acts as a wedge, gradually separating the placenta, working from the center out. This blood clot is called the retroplacental hematoma. Where the edges hold till the last, the placenta turns inside out, and the foetal surface is delivered first, the membrane following after, we have what is called the Schultz method. This is perhaps the most common method of delivery, as well as the best, as the placenta and membrane will come away more completely. The other method, where the placenta comes away edgewise, is called Duncan's, and usually means that one edge has separated early and allowed this retroplacental hematoma to escape and thus has not aided in the separation. In the latter you have hemorrhage before the placenta is delivered, while in the former you usually do not.

Directly after the baby is delivered, and the placenta is still attached to the uterus, you find the fundus of uterus well below placenta is separated and forced down into the umbilicus, and still rather wide. As the placenta is separated and forced down into the lower uterine segment or vagina, the fundus rises a little and is found to be smaller. This is one of the most important points in the third stage of labor, to tell when the placenta is separated and descended into the lower uterus. The change in size and position of the fundus of uterus is very important. You may note a lengthening of the cord. This can be estimated by putting a clamp on cord, just where it emerges through the vulva, or in some way marking it. You must not put a clamp on cord, or in any way injure it until you are ready to separate it from the baby. The third method and one which I never fail to test out is as follows: By placing the hand edgewise just about the pubis you feel a soft baggy mass which is the placenta, and pushing upon the fundus you will find the cord recedes into the vagina in direct proportion to the distance you are able to push up the fundus if the placenta is still intact. You must first see that there is not a coil of the cord in the vagina, but that it is extended. If it does not recede any at all or very little when you push up on fundus, you are almost sure the placenta has separated.

In normal cases the placenta usually separates within a half hour after baby is delivered. If it is not separated within an hour there is usually some pathologic cause. I have had several cases where the placenta was seen to protrude from the vagina as soon as the baby was delivered, so there

must have been separation when baby was delivered. I remember one perfectly normal delivery, short labor, paratuo, where this happened and the baby did not breathe for thirty minutes. I know of no cause for this as cord was normal length and was not wound around baby's neck, but the uterine contraction was very strong.

As soon as I am sure the placenta has separated I have the patient bear down with a pain, if there is one, and the placenta is often expelled spontaneously. If she cannot expel it there is little gained by waiting, thus you should proceed to express it.

In 1853 Crede described a method of expressing the placenta, which, according to J. Whitridge Williams, is clasp the uterus through the abdominal wall, in the hand the thumb being anterior and fingers posterior, holding it firmly in hand, and as soon as a contraction occurs, firm and steady pressure should be made downward in the axis of the superior strait.

De Lee says that Crede in 1861 described the following method: Grasping the uterus in the hand as above described and forcibly squeezing the uterus, force the placenta out. If the placenta is already detached, I see no reason in squeezing the uterus, therefore I grasp the uterus firmly and simply use pressure in the axis of the inlet.

As the placenta comes out the vulva, the membranes are seen to follow after, and it is important to get these all away if you can. If you make strong traction on them they usually break off, and most are left in. Make gentle traction on them and if they seem tight, take one hand and by rubbing the uterus upward, beginning just above the pubis, it releases them. As you press upward, it first pulls the membrane up in the vagina a little, but as you release your pressure the membranes loosen and you can easily pull them out several inches, then they again become tight. Repeat this several times, and usually they all come away. Each time they come out some, you can move your clamp up so you always have a short hold on them. I believe this is better than twisting them, as they so often break off in twisting.

The importance of carefully examining the placenta after it is delivered was brought to my attention the other day, when I discovered a good sized placenta succenturiata. It was about the size of a silver dollar and the attachment to the main placenta was very small, and had it been torn off could easily have been over-

looked and would without doubt have caused considerable trouble if left in the uterus. It is best to get all the membranes if possible, but should some of them be left in, there is less danger in allowing them to pass themselves in a day or two than to subject the patient to infection by introducing the hand up into the uterus. Large pieces of placenta are different, as they usually cause hemorrhage, sometimes very severe, and prevent the uterus from proper involution, therefore should be removed in as aseptic a manner as possible. There is no place that calls for stricter asepsis than where you introduce your hand or instruments, up into the uterus, just after a child has been delivered, or in doing version or medium or high forceps, and yet how lightly we often think of it, attempting it any place and under any conditions. Sometimes the place and conditions cannot be changed. Then we must do the best we can. I, for one, and perhaps all of us, have attempted things in a home, when we could have taken patient to hospital and been able to do better work.

THE USE OF PITUITARY EXTRACT DURING THIRD STAGE OF LABOR.

I am sure we are all interested and anxious to know, how we can cut down the amount of blood lost during the third stage of labor. During the discussion last year on the use of pituitrin, the question was raised as to just when, in obstetrics, we are to use it. I believe that the greatest use we have for pituitrin in obstetrics is during the third stage of labor. I wish here to discuss some recent reports on its use. Ryder reports on one hundred consecutive cases, from the Sloan Hospital for Women. Each had one c. c. of pituitrin given at beginning of the third stage. In twenty-five the placenta was expelled spontaneously before twenty minutes. In seventy-four it was expressed by Crede, with slight pressure at end of twenty minutes, and in one it was expressed by Crede, using strong pressure under ether, at end of one hour. The average time of placenta delivery was 18.2 minutes. The average amount of hemorrhage was 5.9 oz. For comparison, there were one hundred other cases which did not have pituitrin given at the beginning of the third stage of labor. *None* of these expelled the placenta spontaneously. In 98 it was expelled easily by Crede. Two had to be extracted manually after one hour, where three attempts with Crede had failed.

The average time of third stage was 17.5

minutes. The average hemorrhage was 8.2 oz. In this series it would indicate that it is a safe practice, as none of the 100 cases in which it was given had any bad effect.

²Drs. Broadhead and Langruck also reporting 100 cases have the following to say: One c. c. of pituitary extract was given at the beginning of the third stage. The placenta was expelled spontaneously in 19 cases. In 78 cases it was expressed by Crede. In two, manually removed from the vagina, while the other one was an hour glass contraction and had to be manually removed. The average hemorrhage in all the cases during third stage was only 135 c. c. or 4.22 oz.

³Dr. Cron reports the following from the University of Michigan. His series covers 135 consecutive cases. One c. c. of pituitary extract was given deep intramuscularly immediately following the birth of the child. Reporting on all but seven cases, the seven being pathological, there was an average of 255 c. c. or 7.9 oz. of blood lost. The average length of the third stage was only 12.1 minutes. The loss of blood was reduced from 330 c. c. in the control to 255 c. c. in the pituitrin cases, and the length of the third stage from 38 minutes to 12.1.

Here we have a series of 328 cases reported by three different groups of men from three different places, and we find the average loss of blood to be about 193 c. c. or 6 oz. Compare this with some of our best men, where pituitrin was not used. Williams gives 343 c. c. in 1000 spontaneous labors; De Le gives 300; Ahlfell gives 505 c. c. in 2,058 cases. Here we see some very positive results in a large enough series that we must take notice. Some may contend that it causes complication, but that has not been my experience. In my short experience, I have had three cases of hourglass contraction, where no pituitrin was used and none where it was used.

HOURLASS CONTRACTION OF UTERUS IN THIRD STAGE OF LABOR.

I am able to find very little in the literature on this subject, but most authors mention it, so it must be recognized as a condition. Some, however, think it due to a misuse of certain drugs, or the improper conduct of the third stage of labor, or some pathological condition of the placenta, in its relation to the uterus. I wish to report three cases before commenting on it. The first case I saw while in China, in 1917. She was a missionary, had just returned from America to China about a month pre-

vious; had a rather rough ocean trip, and after reaching her station unpacked some trunks and boxes. Para two, and just about seven and a half months in gestation. One morning she had quite a profuse hemorrhage. A diagnosis of partial premature separation of the placenta was made. As the hemorrhage soon stopped and foetal heart sounds were good, and since they were very anxious to have a baby, she was put to bed and expectant treatment was employed, hoping to carry her along so as to give the baby a better chance. I was able to carry her for two weeks, a little bleeding along, when one morning she had quite a profuse hemorrhage, whereupon I packed the vagina and labor came on promptly. There was more or less bleeding during labor, which was about six hours duration. Since the foetal heart remained good I allowed her to deliver herself of a six-pound boy, premature, but quite strong. I waited for the placenta to be delivered but it failed to come down. After waiting one hour, during which time she continued to bleed some, and several attempts at Crede having failed, I introduced my hand into the uterus and found a distinct hourglass contraction, with about half the placenta above the contraction. I was able to dilate and remove the placenta, whereupon the hemorrhage ceased and mother and baby got along fine. No anæsthetic was used.

The second case was a para one, age twenty; lacked about two months of being due. I was called in on the case. Foetus was in traverse position. Version and extraction were done. The placenta failed to come away and after waiting one hour, during which time, there was some bleeding and Crede method had been tried several times without success, I introduced my hand into the uterus and found an hourglass contraction. About half of the placenta was above contraction. Extraction was made under gas anesthesia. Patient made an uneventful recovery.

The third case was Mrs. W., age 32. Para four, full term, normal birth. Duration of labor about four hours. Uterus contracted down nicely, but placenta never seemed to descend into lower uterine segment. There was no hemorrhage and uterus remained firmly contracted. Crede was tried in thirty minutes and again at end of one hour without results. I was reasonably sure of the conditions. On introduction of my hand into uterus I found a perfect hourglass contraction, with none of the placenta below the contraction. So

strong was the contraction that it squeezed the cord and at first I could not even get a finger in. After I secured complete ether anesthesia, I was able to slowly dilate. The placenta was adherent and I had quite a time to get it separated. Patient made a perfectly normal recovery.

Here we have three separate cases, each different. None of them had any medication. There was nothing out of the ordinary about the conduct of labor. The first two cases were premature, with small babies and uterus was not at any time overdistended. The second case I did version and extraction, while the other two delivered spontaneously; therefore, I am unable even to suggest any etiology. The strictest aseptic precautions were observed with perfect results. I do not believe the use of pituritin at the beginning of the third stage of labor tends to bring on this condition, but rather would have a tendency to believe just the opposite.

I am not sure but what these contractions might relax after several hours and the placenta be delivered spontaneously. How can we determine that we have an hourglass contraction unless we put our hand up into the uterus? Why not, when the hand is once in the uterus, dilate and remove the placenta and end it? I feel it would not be wise in all cases, and conditions, to go up into the uterus, therefore we must find some safe method of treatment. When you have severe hemorrhage, as I had in that first case, you must do something. If by the use of pituritin at the beginning of the third stage of labor you could prevent this condition, it would be an easy remedy. My experience along this line has been too limited to be at all conclusive, but I should like to hear from others, who may have met with this condition, just what they think of it, and how they treated it.

I do not have the time to discuss adherent placenta, the different kinds of placenta, or hemorrhage and its treatment during the third stage of labor, all of which are not only important but most interesting.

SUMMARY.

Strive to get the placenta and membrane away complete in every case without endangering your patient to infection any more than you have to.

Try to receive a Schultz separation and delivery of placenta, this being secured by as little manipulation of the uterus as possible.

Pituitary extract has a distinct place in obstetrics, which is in the third stage of labor.

An hourglass contraction during third stage of labor is a reality, and demands more consideration as to its symptoms and treatment.

In closing, allow me to say, there is no phase in medicine which demands more consideration and *stricter* asepsis than obstetrics, and especially the third stage of labor.

1. The American Journal of Obstetrics and Gynecology. Vol. II, No. 1.

2. The American Journal of Obstetrics and Gynecology. Vol. III, No. 2.

3. The American Journal of Obstetrics and Gynecology. Vol. III, No. 3.

Discussion by WALTER W. WELLS, Oklahoma City, Okla.

The care of the third stage of labor has always been interesting to me. I have been in the habit of letting the mother rest for ten to twenty minutes, then taking hold of the cord, and with just slight traction, so as to make the cord taut, move the cord right, then left, then up and down. This will usually cause some irritation of the cervix, and by telling the patient to bear down, with the stimulation of the cervix from the cord as stated there will be a good contraction of the uterus, and in the majority of cases the placenta will be expelled. This I believe leaves the uterus contracted down after the expulsion of the placenta.

Now in regard to the use of pituitary extract, I never use it before the delivery of the placenta, except when I do a Cesarean Section, then give a hypodermic of 1 c. c. pituitary extract, just as I make the incision into the uterus.

Discussion: W. A. FOWLER, M. D., Oklahoma City.

The reference to three cases of hourglass contraction of the uterus in so short a time is rather unusual. I have never recognized this condition in my own practice. It is possible that in passing the examining finger through the widely dilated monoco tractile lower segment of the uterus to mistake the beginning of muscular portion for an hourglass contraction.

We all know, however, that this condition does exist and we frequently have two or three cases of a very unusual condition

in a short period of time and this is doubtless the case with Dr. Brown.

Dr. Brown very clearly describes the normal mechanism in the separation of the placenta. We should give a great deal more time to the study of what has been called the "perfect plan of nature."

The normal interval between the contractions of the uterus is Nature's provision to allow the effusion of blood at the detached areas in the placental site, this blood acting as a wedge to produce further separation of the placenta during succeeding pains. The signs of the detachment of the placenta have been very accurately given. The process is best favored in my opinion by leaving the fundus strictly alone until detachment has taken place.

When I was in school, we were told to grasp the fundus and hold it firmly during the third stage. This instruction I carried out very faithfully. I noticed, however, that in the cases where the condition of the baby prevented my doing this, I had very much less trouble with the placenta. At the Long Island Hospital, a very large series of cases was reported in their outpatient department, in which there was no treatment of the uterus until the placenta was detached, without a single case of post-mortem hemorrhage or manual extraction of the placenta. These results have certainly not been improved upon by the men who recommend such measures as the routine administration of pituitary extract in the third stage of labor.

Closing: J. WINTER BROWN, M. D.

The frank and free discussion of my paper has certainly been a pleasure to me.

I fear the method suggested by Dr. Osborne for separation of the placenta by using salt solution will not prove practical.

I am glad to hear that Dr. Fowler agrees with me, that in most cases there is too much manipulation of the uterus. He described a condition which he says he sometimes meets, which seems to be identical with what I described and called an hourglass contraction; but he seems to be afraid to give it a name. A number of others seem to discredit such a thing as an hourglass contraction. A name in most cases means very little, being more of a convenience. I have three times met with a very definite condition which I called hourglass contraction. Dr. Fowler described a similar condition, unnamed. One or two other men today have mentioned similar condi-

tions where a patient was untreated, or treatment began too late, where patient died. Therefore, taking the three cases I have this day reported, and from what I have heard here, I am sure that there is such a condition and that it demands prompt and serious care, whether we call it hourglass contraction or something else.

A number of doctors here today do not seem to take well to the routine use of pituitin in third stage of labor. Dr. Lowery, reporting definite figures does not seem to see the need, but did he use controls in his series? All the others seem to be personal opinions without figures or facts to back them.

One doctor even seemed to doubt the advisability of making advancement in obstetrics, but the fact that babies were born a hundred years ago, let them be born today with the same care. There has been advancement made in every other line; take for example, farming, traveling, stockraising; and in every other line of medicine. I am for conservative advancement in obstetrics as well as in every other thing; and I believe if we make child-bearing safer for both mother and child, less suffering for mother, and seeing that she is not a physical wreck after the baby is born, we will do much to eliminate our childless homes.

I want to here thank each one who has taken part, and assure you all that I am for better obstetrics in our state and nation.

HISTORY, EXAMINATION AND ANTE-PARTUM CARE IN PREGNANCY.*

DICK LOWRY, B. S., M. D.,

From the Department of Obstetrics, School of Medicine, University of Oklahoma.

A good history with accurate physical examination and proper prenatal care is something to which every pregnant woman is justly entitled. When this phase of obstetrics is no longer neglected the art of our specialty will have made its greatest advance from its present low plane.

HISTORY.

There are a few significant points in taking a prenatal history. The family history should deal particularly with tuberculosis, apoplexy, paralysis, brights disease and cancer. We should ascertain the character

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of labor experienced by the women of the family as it may indicate the possible type of labor in our case or give us a clue to a contracted pelvis. In taking up the patient's past history a most important point is to question her concerning any severe illness she has ever had which might have had a pernicious effect upon her heart, liver, lungs or kidneys. We should determine whether or not she has had typhoid, pneumonia, scarlet fever, diphtheria, smallpox, quinsy or rheumatism with any complications. The operative history should be taken. Of course her cardio-respiratory, gastro-intestinal and genito-urinary history should be obtained. Her marital history must be complete with full information concerning her children, previous pregnancies and abortions and previous labors. We should question her concerning any signs and symptoms of toxemia.

PHYSICAL EXAMINATION.

It goes without saying that the physical examination must be complete and very careful. Every organ in the woman's body is affected by the function of gestation and we must determine accurately her physical fitness for undergoing these changes.

Since the heart, lungs, liver and kidneys are put upon the greatest strain a closer investigation into their efficiency is imperative.

HEART.

We all realize the gravity of heart complications of pregnancy. In considering these, the most important point is to determine the myocardial efficiency, as myocardial disease is more serious than the valvular defects. We must not place too much emphasis upon murmurs alone. However, it is important that we recognize the various types of murmurs and place upon each its relative significance. Mackenzie states that: "Systolic murmurs, no matter in which area they are the loudest should never be a cause of anxiety in pregnancy. That if they occur in a heart which shows no other abnormal signs, and if the patient's response to effort is good they should be ignored. If they are associated with other signs of heart disease the prognosis should be based on those other signs and not on the systolic murmurs." Remember that 40% of pregnant women have a physiological or functional murmur? How do we recognize the functional murmur? (1) They are always systolic in time. (2) Their point of maximum intensity is variable; they may be loudest at the

base, midsternum or apex. (3) They may come and go; may disappear when patient is in recumbent position, or may be magnified by same. The same applies to standing. (4) They are not transmitted. (5) There is no evidence of accompanying cardiac pathology or symptoms of cardiac inefficiency.

On the other hand, any murmur that is rough, harsh, transmitted, diastolic or presystolic in time is practically always indicative of a valvular defect, and upon finding them we should immediately search for further signs of cardiac inefficiency. We should never forget to palpate for a thrill, remembering that mitral stenosis is the most common of valvular defects with which heart failure is associated and is the most serious of the murmurs. It is more frequent in women than men and is often not diagnosed. Seventy-six per cent of Cabot's mitral stenosis cases were in women and only about 50% of those found at autopsy had been diagnosed in hospital life. At early stenosis may be very variable and inconstant in its physical signs.

All pregnancies seem to draw more or less on the reserve force of the heart, and it is very important to recognize the early symptoms and signs of heart failure. They are: (1) poor response to effort; (2) premature fatigue; (3) increase in respiration; (4) increase in pulse; (5) oedema of base of lungs. The last is the most reliable symptom. Mackenzie found in many pregnancy cases fine crepitant rales at the bases, which disappeared after a few deep inspirations. But when they persist even after deep inspirations it is usually a sign of beginning failure.

Every organic heart case in pregnancy should be under very close supervision. Physical activities such as climbing stairs and walking should be restricted to the necessary degree, and an abundance of rest; in bed if necessary, should be taken by the patient. It is my opinion that any case of mitral stenosis or aortic regurgitation, upon developing any early signs of cardiac weakness, should be interrupted. Dr. Newell says: "In primiparae with mitral stenosis or with aortic lesion delivery should in his opinion be accomplished by Caesarian section, preferably about two weeks before the estimated date of labor, so as to spare the heart the increasing strain of the last few weeks of pregnancy." In any event in all heart cases we know we should desire a short painless first state with a rapid (probably instrumental) second stage.

LUNGS.

Turning to the lungs of course we think primarily of tuberculosis. We know the influence of pregnancy on tuberculosis is unfavorable in about 75% of cases. Many cases of T.-B. date their first symptom from childbirth. It is estimated that one-third of the pregnant tubercular women die within one year of their confinement and that there are 32,000 tubercular women pregnant every year in the U. S. A. Laryngeal tuberculosis is very serious in pregnancy. Lobenstein collected 231 cases of this type from literature with 200 deaths during pregnancy, labor or soon after, a mortality of 86%.

The diagnosis of T.-B. must still depend chiefly upon the physical findings and history with possibly a little assistance from the tuberculin and complement fixation tests and x-ray.

Of course we should all be able to diagnose moderately advanced tuberculosis but we should always inquire and examine closely for evidence of the incipient stage. In this stage the pulse is generally frequent and upon effort has an abnormal acceleration. A slight rise in temperature is the rule but not a necessary symptom. Loss in weight, or rather a slow gain, in pregnancy, is an important symptom. Pain in the lung or shoulder is not uncommon. Hoarseness with history of coryza, laryngitis or bronchitis may be present. Anorexia is not infrequent. In the physical examination I think auscultation is the most dependable. Our first suggestive change is development of so-called roughened breathing. Moist crepitant rales is an early sign but we must remember that they may not be found for a long time.

It is my opinion that any case of pregnancy with activity; moisture in the lungs and rise in temperature which does not respond rapidly to rest in bed should be interrupted early in pregnancy. Arrested cases should be closely observed with insistence upon proper rest and diet.

FOCAL INFECTIONS.

Searching for evidence of focal infections should demand our close attention in these examinations. This is important not only from the standpoint of the mother but also from its influence on the placenta and child. Talbot in an A. M. A. article states that focal infections are capable of throwing bacteria into the blood stream and may be a menace to the baby. Nearly every baby which in his experience developed

hemorrhage of the newborn had come from a mother with a demonstrable peridental infection. He reported 97 consecutive toxemias, every one of which showed chronic dental sepsis. Breast abscess, infection of the birth canal, pyelitis, hydromnios, abortion, hemorrhagic disease of the newborn and pustular eruption of the newborn are some of the conditions which he thinks focal infections may cause. Tonsils, teeth and sinuses of course are generally the offenders.

Let us devote a moment to the points in recognition of dental sepsis and tonsillar infection. Preliminary to examining the mouth we should search for anterior cervical adenopathy. Should we find an enlargement of the anterior cervical glands without a generalized adenopathy we immediately suspect the teeth or tonsils.

How are we to recognize peri-dental infections? Points that make us suspicious are: (1) swollen, red, inflamed gums; (2) bleeding gums; (3) ability to express pus or exudate by pressure against gums; (4) lateral movement of the tooth by digital examination and any perpendicular movement of the tooth by pressure on top of the tooth; (5) x-ray assists in the diagnosis; (6) probably the most certain way to determine infected pockets is to search about all surfaces of all teeth with a metal instrument (dental instrument) with a thin but not sharp blade. If such an instrument can be passed more than 1½ m. m. past the gum margin without meeting resistance it is a very suspicious condition.

Teeth carrying fixed bridges are especially suspicious because a strong tooth at one end of the bridge may act as a splint and support a very weak infected one attached to the other end.

All pulpous (with pulp destroyed) teeth are predisposed to alveolar abscesses. We may suspect pulpous teeth by (1) tenderness to percussion; (2) discoloration of tooth; (3) tooth that is painful to heat but not to cold.

A tooth with a pivot crown is always suspicious.

The profession has been very conservative in the management of focal infections in pregnancy. With rare exceptions we should treat them during the first eight months as though there was no pregnancy.

INFECTED TONSILS.

Points that would make us suspicious of infected tonsils are: (1) past history of

quinsy; (2) reddened anterior pillars; (3) ability to express necrotic foul smelling material from the tonsil; (4) spongy tonsils with open crypts; (5) anterior crevical adenopathy with negative teeth.

PYELITIS.

Pyelitis is such a frequent complication of pregnancy that we should ever be on the alert to observe a history of pain in the back, dysuria, frequency of urination and vesical tenesmus. We should never omit palpation of the kidney region and gentle succussion with fist over the costo-vertebral angle.

SYPHILIS.

Syphilis is a condition that should always be looked for. Since it has been claimed that at least 40% of women infected with syphilis present no objective symptoms nor are they aware of their condition, a routine Wassermann should be done. Williams states that syphilis accounts for 34% of foetal deaths and deaths in early infancy; almost as much as the next three causes, namely: dystocia, toxemia and pre-maturity, combined.

Upon discovering syphilis, of course active and thorough treatment should be instituted immediately.

GRAVES' DISEASE.

We should always examine closely for this condition. Other toxemic symptoms of pregnancy not infrequently simulate it. In its severe form it is generally aggravated by pregnancy. In labor we should make an effort to relieve the strain which pain and bearing down have upon those hearts.

LIVER AND KIDNEYS.

In determining the efficiency of the liver and kidneys the most dependable and accurate method at our hands is blood chemistry. Authorities pretty well agree that in normal pregnancy, as compared to the non-pregnant state, we get a low total N. P. N., low urea nitrogen and very low ratio of urea nitrogen to the total non-protein nitrogen. There is some discrepancy of opinion as to the ability to differentiate hepatic and renal toxemias by blood chemistry. However, in the toxemias as a whole we get an increased N. P. N., though the urea-nitrogen may vary considerably.

In pre-eclamptic conditions we find a high uric acid retention and in some cases it is the only nitrogen waste product which is very much increased.

BLOOD PRESSURE AND UNINALYSIS.

Of course the significance of routine

blood pressure examinations with complete urinalysis every two weeks until the last month, then every week, cannot be over-estimated. Any elevation of pressure to 140 or above should cause you to suspect toxemia. Albuminuria should always serve as a danger signal and should prompt a search for its etiology and indicate treatment and closer investigation into kidney efficiency. Urinary concentration tests are enlightening and easily done. The sp. gr. should always attract our attention. Morning specimen should be obtained and should run a sp. gr. of about 1017-18; 1015 should arouse your suspicion and 1010 should cause you to feel reasonably certain there is a kidney inefficiency.

DIABETES.

Let us remember that while true diabetes mellitus is rare in pregnancy it is often completely overlooked and that we may have hyperglycemia with no glycosuria. As Dr. Bell has said: "It is quite conceivable that many cases may have died, in coma supposedly uremic, when in reality the condition was unrecognized diabetic coma." In taking our histories we should pay attention to symptoms of thirst, furcles, spurious and possibly family tendency toward diabetes. Should we be at all suspicious we should obtain a blood sugar estimation. Should we find a glycosuria at any time we should immediately determine if there is a hyperglycemia or whether we are dealing with a plain lactosuria or glycosuria. The effect of true diabetes upon pregnancy is bad and during the first four months of pregnancy is an indication for interruption.

BASAL METABOLISM.

It would be interesting could we determine basal metabolism in our cases. Dr. Baer in a recent article states that the basal metabolism rate in normal cases in late pregnancy averages 33-35% above normal non-pregnant women. Seven days post-partum it is normal. He further states that death of the foetus in late pregnancy is detectable by a drop in basal metabolism. It may help in differentiating multiple from single pregnancies.

X-RAY.

The x-ray has established a very definite place in obstetrics. Dr. Petterson says: "There is every indication that pregnancy can be diagnosed as early as the sixth week by pneumo-peritoneal x-ray." It is of great assistance in determining the foetal position and probably roent-geneologic pervimetry will soon prove accurate and dependable.

ABDOMINAL EXTERNAL AND INTERNAL PELVIC EXAMINATION.

Abdominal, external and *internal pelvic examination* with measurements are among the *most important* features of the examination. I will not dwell upon them only to emphasize their *very great importance*.

PRE-NATAL CARE.

Dr. Beck of Brooklyn, recently reviewed 3,000 cases and definitely proved that under pre-natal supervision there had been a reduction in foetal mortality of over 66%. There is no argument against; and every possible argument for; proper pre-natal management. For many years its neglect has been disgraceful, but the obstetrician is gratified to see the laity and profession now beginning to realize more and more its value.

In conclusion I will simply give the list of instructions given to the pre-natal cases in the Dispensary of our State Medical School:

"Every woman should consult a doctor as soon as she learns she is pregnant.

1. Bring a specimen of urine to the dispensary and have the blood pressure taken every two weeks.

2. Return to the dispensary or communicate with the doctor or nurse at once if you have:

- (1) Pain.
- (2) Bad headache or dizziness.
- (3) Much swelling of face, feet or limbs.
- (4) Chills or fever.
- (5) Severe constipation.
- (6) If you don't feel the child move.
- (7) Any other unusual symptoms.

3. If you bleed, go to bed and notify the doctor or nurse at once.

4. Walking in the fresh air is good for you. Avoid heavy lifting or other violent exercise. Don't get too tired at any time. Plenty of open air exercise every day, and plenty of sleep with windows open will keep you and your baby well.

5. A simple, wholesome diet of well-cooked food is what you need. Do not over-eat. Avoid generally eating between meals. Eat very sparingly of meats and acids. Avoid very salty or very greasy foods. Drink two quarts of liquid a day.

6. You should have at least one good bowel movement a day. Two movements a day are better. Eating coarse cereals, such as oatmeal; bran or graham bread and cereals; fruits such as prunes; and drinking plenty of water will help keep the bow-

els regular. Consult the doctor if these measures are not sufficient.

7. Take a bath every day, a tub bath with soap and warm water at least once a week. During the last three weeks of pregnancy sponge or shower bath only, is preferable.

8. Douches, examinations or sexual intercourse are dangerous during the last six weeks of pregnancy.

9. Your clothing should be comfortably warm, not too heavy, and should be hung from the shoulders. A properly fitted maternity corset may be worn. Low-heeled shoes are best.

10. During the last month of pregnancy wash the nipples daily with tepid water, a soft cloth, and some mild soap, such as castile soap, after which dry them with a clean towel.

11. Massage the abdomen each night during the latter half of pregnancy with olive oil or some such lubricant. This tends to prevent the stripe or scars in the abdominal wall frequently occurring during pregnancy.

12. At the time of confinement and during the two weeks following, you and your baby should have the best hospital, medical and nursing care. If unable to come to the dispensary for these examinations the nurse should be notified on the proper date.

14. After being allowed out of bed take the knee-chest position for three or four minutes once or twice a day after which lie on either side for about two hours. This should be kept up for at least four weeks.

15. Report to the dispensary if you have backache, sense of fullness about the pelvis or other unusual symptoms after getting up.

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Discussion: DR. E. P. ALLEN, Oklahoma City, Okla.

Dr. Lowry's paper is very interesting and instructive, and if the men who are doing obstetrics would study these cases

and take the interest in them and care for them as Dr. Lowry cares for his patients, we would not lose ten thousand or more mothers every year in the United States from childbirth, and have ten times that many more who are permanently disabled as a result of improper care during this period.

A pregnant woman is subjected to all the illnesses that anyone else is and I know of no condition, either acute or chronic, that cannot be treated at this time, if treatment is indicated. Dr. Lowry has told you all foci of infection should be carefully looked for and removed, however, it has been the belief of the laity for centuries that foci of infection, and especially bad teeth could be treated at this time. Even now we subject ourselves to severe criticism if some accident should happen during the treatment of above conditions, but that should not hinder us from advising the thing that in our opinion is right.

Dr. Lowry has gone very thoroughly into the history and physical examination of these cases with special reference to the heart and lungs. In my mind this is the big problem in obstetrics today and the thing that we who are doing obstetrics probably know the least about. If we take into consideration that a normal heart has a cardiac reserve of about 13 times that required for bodily comfort while at rest, and then we add the extra work of pregnancy with the definite change in the contour of the chest, a flaring out of the ribs or widening of the lower border and an upward displacement of the heart and a tendency for the arterial tension of systolic blood pressure to be lowered, and as we know, the response to effort is not so good during pregnancy, it seems reasonable then that we may assume that a part of this cardiac reserve must be used during justation. Now, if you add to this condition a history of rheumatism, acute tonsillitis, scarlet fever, influenza or any other acute affection which is followed by a murmur, be it presystolic, systolic or diastolic, I think that this is a heart condition that should be watched very carefully.

We have been in the habit of making a diagnosis of mitral stenosis when we have a small, rapid, easily compressible pulse, low blood pressure, presystolic thrill and a presystolic murmur at the apex. I believe a woman with proper care will probably get by with these symptoms, but if we have in addition a slightly enlarged heart with breathlessness, poor response to effort, and persistent rales in the bases, then we may

know that we have a myocardial involvement and are dealing with a serious condition.

Of course, aortic regurgitation with marked enlargement of the left ventricle, pulsating carotids, Corrigan pulse, high systolic and a low diastolic blood pressure is pathological and must be treated as such, yet, we have women with aortic regurgitation or a loud blowing diastolic over the aortic area without the marked symptoms mentioned above, who live through repeated pregnancies without apparent damage to the heart muscle. Therefore, we must sum these cases up as Dr. Lowry has already told you, and work out some method by which we can determine the myocardial efficiency or the cardiac reserve and treat our patients accordingly.

Active tuberculosis and pregnancy always has been and, as far as I can see in the future, always will be the unsolvable question to the obstetrician. I doubt seriously if every case of active pulmonary tuberculosis, even with a p. m. temperature, impaired resonance, broncho-vesicular breathing with rales in one apex and tubercular bacilli in the sputum should be terminated, and I feel reasonably sure that if terminated at all it should be done before the end of the fourth month and preferably the third.

If I dared give you my personal opinion, I would divide these cases into three classes and treat them accordingly.

(1) Proven active tuberculosis, which is diagnosed early in pregnancy with anorexia, nausea, vomiting, loss of weight, and an apparent tendency of the tubercular process to spread. If within a reasonable time the above condition was not controlled by the proper care, I would advise immediate reference. Unfortunately, this represents the larger class of our cases.

(2) The same type of case, who does not develop this nausea, vomiting, etc., I would put to bed, treat her for the tuberculosis and hope to have her either improved and in a quiescent condition by term, and then deliver her under morphine, scopolamine and anesthesia with just as little effort on her part and with just as little shock as possible.

(3) The advanced case with a good appetite, where the pregnancy is not causing undue suffering, and in which a baby means everything, I would treat the tuberculosis in the hope of saving the baby at term.

Volumes have been written on arterial

hypertension and we are all on the lookout for this, but very little has been said of *hypotension*. I notice that a great percentage of my cases have a low blood pressure, and I am at a loss when I go to search for the cause. I saw a little clipping from one of the journals in which it states that these patients are anaemic, nervous, over-worried and have flabby muscles. Blood tension and muscle tensions are generally functions of each other. The way to correct these conditions would be by prescribing a gradual exercise, freedom from overwork and over-worry, outdoor life, fresh air and good food.

The x-ray is a wonderful help in determining multiple pregnancies, vertex, transverse or breech presentations, but in our hands it has been a complete failure in determining the exact location of the occiput.

Discussion: W. A. FOWLER, M. D., Oklahoma City, Okla.

This is an excellent and timely paper. If we take a careful general history and make a painstaking examination of all our patients, we will find the existence of chronic infections much more frequently than we would suppose.

In the case of tuberculosis for instance: as has been said, tubercular infection is practically universal and it is so curable that most people get well, never knowing of the existence of the infection, but in a rather high percentage of people, the infection does not entirely heal but remains in a mild low-grade form for months and frequently for years. The patient may live to an old age in this condition and die from some other cause.

Any unusual draught upon the patient's resistance may result in the flaring-up of the infection and the development of advanced tuberculosis. Not infrequently the loss of blood at the time of confinement; the shock from pain and trauma; the loss of sleep, and anxiety in caring for the baby; and nursing the baby, form just such a draught upon the patient's reserve as to result in the flaring-up of these quiescent processes. Hence the old saying: "Confinement is likely to run into consumption."

In the mild, low-grade form, it is detectable only by a careful history and physical examination, but if detected, the institution of very simple hygienic measures affords the most gratifying re-

sults, and these patients that might otherwise develop advanced tuberculosis become and continue in better health than ever before. In my own practice, this is one of the most gratifying things that I witness. A careful general history and physical examination requires about one hour's time, and I consider it one of the most valuable hours that I spend for my patient's welfare.

THE CARE OF PREMATURE INFANTS.*

A. L. SALMON, M. D.,
Oklahoma City, Okla.

In dealing with the subject of prematurity, we can well place in the same general class, those infants, who though born at full term, are immaturesly developed, or are of such a condition physically, that their management might well come under the same rules as the baby prematurely born.

Strictly speaking, a premature infant is one born three weeks or more before the end of the normal gestation period.

Since our prognosis is in no small way influenced by the time of intra-uterine development, we will consider, briefly, a few points of value in determining the probable age of the premature. Of all means, the word of the mother as to the date of the last menstrual period, is perhaps the least reliable. Just as unreliable is the weight. We have full term babies born of syphilitic mothers or from mothers showing a high albuminuria, which might weigh even less than the product of a seven months pregnancy in a healthy woman.

The matter of determining the length of the intra-uterine development is difficult in any event, but the development of the osseous system, together with the body length of the infant will materially aid in this determination, and a consequent prognosis.

Griffith quotes the following measurements:

- 5½ months, length 11 to 13.4 inches.
- 6½ months, length 15 inches.
- 7½ months, length 15.4 to 16.1 inches.
- 8½ months, length 16.5 to 17.3 inches.

The Viability of prematures according to Griffith's table varies directly with the foetal age of the infant, the mortality being

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80.4% in those born at the 6½ foetal month to 35.5% in those born at 8 foetal months. Only one exception in this does he show, and that is at 7½ foetal months his mortality is 30.1% or approximately 5% less than those born at 8 foetal months. The chances of living based on the length of the infant show a direct increase varying from 21% in those 15.8 inches long to 58% in those 18.5 inches long.

In general our symptoms of prematurity might be set down as follows:

Low body temperature, maintained at normal with great difficulty.

The cry is feeble and scarcely audible and infrequent. There is a tendency for the infant to lie in a state of inactivity.

The development of subcutaneous fat is slight, giving the infant a wrinkled appearance and the drawn features of an aged person.

Respiration is feeble and intermittent and there is a marked tendency to recurrent attacks of cyanosis. The power to suck is often lacking and swallowing is difficult.

We might divide the care of premature infants into two general heads, *i. e.* (1) General care, with its attendant care of diseases peculiar to prematurity, and (2) Feeding.

GENERAL CARE.

Strict Asepsis—We must have in mind the fact that we are dealing with an infant whose resistance to infections is less protected, their vitality at a low ebb and all measures of strictest aseptic technic should be rigidly adhered to.

Maintenance of Body Temperature—Heat regulation and maintenance is perhaps one of the least developed functions of the premature infant, and if we are to have any success whatever in carrying these babies to a successful maturity, our very careful supervision must rest constantly on the baby's temperature. A premature whose temperature remains consistently low, in spite of our attempts to bring it up, is one whose vitality is at a low ebb, and one on whom our prognosis must consequently be grave.

To be able to maintain a normal body temperature necessitates proper equipment. Primarily our aim is to surround the infant with an even temperature ranging from 85 to 95 degrees (based on our needs) and at the same time permit of an abundance of fresh air. Together with

this we must attempt to prevent the loss of bodily temperature by radiation.

This preservation of heat must be begun immediately at birth to forestall, if possible, the initial temperature drop.

If we are dealing with these infants in the home, we must improvise an equipment adequate to meet our needs. Perhaps this can be best accomplished by means of a clothes basket properly lined with pads and covered over about two-thirds of the way, the open one-third permitting of the entry of fresh air. The heat may be maintained by hot water bottles, electric pads, or by electric light lamps suspended into the basket. Our temperature can be regulated by means of the addition or removal of more lamps. Care must be taken to insure no burning of the infant, for very slight burns usually prove fatal.

The baby should be wrapped in some non-conductive material to aid in maintaining our body heat. A pad of cotton, perhaps, serves the purpose best and this should completely surround the baby.

Bathing should not be attempted at first, but the infant may be oiled with olive oil. All handling of the baby should be reduced to the minimum. The room temperature should be 72 to 74 degrees; however, it might be necessary to have this temperature as high as 80 degrees in cases where the body temperature is maintained with extreme difficulty.

Regarding incubators, in my opinion the one designed by Hess is perhaps the most efficacious and simple. The temperature is readily maintained at any degree by means of a themostatic regulation of a heating plate which heats water surrounded by copper walls. This particular type permits of the entrance of an abundance of fresh air, and has proven very efficient. It is simple and safe—two very important requisites.

Before taking up the matter of the feeding of these premature infants, we might briefly consider some of the diseases of which they are subject:

Hypothermia—This we have discussed previously.

Cyanosis—Perhaps no condition causes all concerned, as much anxiety as the frequent attacks of cyanosis, so often met with in this class of infants. We have many conditions which cause this and may be divided into two classes—*i. e.*, Non-Circulatory and Circulatory.

Non-Circulatory may embrace pulmonary atelectasis, sudden chilling, starvation, and

aspiratem of food or mucous. We occasionally see these infants in a cyanotic attack and no definite cause can be ascertained. There seems to be a cessation of respiration, which after the blood is heavily laden with carbon dioxide, is restimulated and respiration again takes place. The individual attacks may be overcome by gentle artificial respiration, oxygen or aromatic spirits of ammonia. In these cases, I employ small doses of atropine sulphate with marked benefits, if there is any tendency to a regurgitation, I use 1-2500 grain every three hours given in solution before a feeding. This dosage may be changed according to the effects.

Hyperpyrexia may be the result of faulty heating appliances or starvation.

Infections—We have mentioned before the susceptibility of premature infants to infections and when they occur the same general plans of handling infections in normal babies must be observed.

FEEDING.

In no class of infants, have we such a wide difference of opinion, in the feeding, as in the weak premature. All the difficulties that we might find in the care of many babies, present themselves, very often to the most uncomfortable disturbance of our mental peace. If we are to keep down the mortality rate in these infants, we must recognize the utmost importance in breast milk. Formulae may form a very helpful adjuvant, but we should exhaust every means of supplying breast milk to these babies, before attempting formula feeding alone. There might arise circumstances which, might, in our judgment, be sufficient to make radical changes from a breast feeding, and when such an occasion does arise, we should unhesitatingly follow that course that seems best for the infant and the mother.

The loss of weight from birth is much more, proportionately, in a premature than in the normal full term infant. It is highly important that we attempt to minimize this initial weight loss. To do this feeding should be started early, and, as these infants take only small quantities, often. The majority of prematures are too weak to suck, consequently we must arrive at a means of feeding them. This can be accomplished by means of a medicine dropper, a Breck feeder or by catheter. Of these, I prefer the Breck feeder, which is nothing more than a tube, flanged on one end to admit of the attachment of a small nipple, with a compression tube on the

other end. By means of gentle compression the milk or fluid is forced through the nipple. In this way we are, at the same time as giving baby fluid, teaching it to nurse. The Catheter feeding should be resorted to only in institutions where help is competent or by the physician himself.

No attempt should be made to give the baby food the first 12 hours. 1% lactose solution may be given at intervals, however, and balancing our dehydration by a fluid intake we cut down the initial weight loss. If possible to obtain, breast milk should be given in small quantities well diluted at the end of twelve hours. If the infant is able to nurse, it should be put to the mother's breast for three minutes at four-hour intervals, even though little or no fluid is obtained.

On the second day our feeding schedule should start, regularly night and day. Our interval of feedings are based largely on the condition of the infant—the smaller infants at intervals of two hours and the larger ones at three-hour intervals.

ARTIFICIAL AND SUPPLEMENTARY FEEDINGS.

We have mentioned before the great importance of breast milk in the feeding of prematures, however we are forced often to feed these babies artificially either wholly or in part. Whenever possible and even if other foods must form a supplemental feeding, it should be borne in mind that all the breast milk obtainable should be given, supplementing this with a formula.

It is impossible to form definite rules for feeding prematures. Each infant must be individually studied and fed accordingly.

Quantity and quality of food must be made to fit the individual case. We have, however, a few cardinal points which may serve as a basis for our arriving at a formula.

We can hardly expect a baby to gain unless it is receiving 40 to 45 calories per pound body weight, each twenty-four hours. Considering the small amount that we are able to give at a feeding, we can not do this unless we make our mixture too strong or the quantity too much. Furthermore, the baby should have one-sixth its body weight in fluids each twenty-four hours to combat dehydration. Consequently in order to approach these caloric requirements and fluid requirements we place our feeding period closer.

With a few days development our caloric requirements are more per pound body weight, but our stomach capacity increas-

ing, we might reach this by larger quantities as well as stronger dilutions.

The quantity to be given at a feeding is largely a determination by observation of each particular infant. Usually three to four drams is the maximum amount that can be comfortably taken the first two days. By the end of the second week $1\frac{1}{2}$ ounces will probably be reached.

In selecting a food for artificial feeding, I have tried various ones—simple milk and water mixtures, whey mixtures, condensed milks, but have received my best results from "Dryco." It seems to be more readily digested by the weak infant and its preparation simple. Our mixture at first should be one teaspoonful to an ounce of water. In three days this may be increased to two teaspoons to one ounce of water and in a week a tablespoon to two ounces of water used, even though the baby does not take the full two ounces. Later the caloric value may be fulfilled, computing 16 calories per tablespoon (level) of Dryco, and the general rules of feeding carried out in these infants as full term infants.

Discussion: T. C. SANDERS, M. D., Shawnee, Okla.

I wish to commend Dr. Saloman for his paper, which was a good one. These premature babies are nearly always big problems as most of us have discovered in trying to handle them successfully. I would like to emphasize what I consider the three cardinal rules in the treatment of these cases:

(1) Looking closely to keeping up a certain body heat, and a proper regulation of room temperature.

(2) To use all hygienic measures necessary to protect the baby from any untoward external influence, and

(3) Frequent feedings.

Discussion: W. A. FOWLER, M. D., Oklahoma City.

From the standpoint of the obstetrician, I consider it of great importance in these cases to avoid the rapid loss of body heat which comes from the evaporation of the amniotic fluid on the baby's body by wrapping the baby as soon as it is born in a warm bath towel.

In every premature birth, a sterile bath towel should be kept warm for this purpose, as the little patient can poorly sustain

the shock which results if this point is neglected.

In the way of nursery administration, the baby's gain or loss of weight can be ascertained without disturbing the patient by weighing the blanket, baby and all in the same amount of covers, and so forth.

PUERPERAL SEPSIS.

W. A. FOWLER, M. D., F. A. C. S.,

From the Department of Obstetrics, University of Oklahoma, School of Medicine, Oklahoma City, Oklahoma.

Puerperal Sepsis, "a prosaic and threadbare subject," you might say. Truly it is, but as long as approximately 10,000 women in the United States are dying each year, and many times this number are being subjected to life-long morbidity from this cause, which is nearly always preventable—these facts ought to be a sufficient apology for our frequently taking counsel together in the effort to lessen its frequency and ameliorate its results.

That obstetrical practice has not kept pace with the advancement of general surgery is probably due to several factors. The aseptic conduct of labor represents a difficult problem in technic. The rather high natural resistance of the tissues of the lower part of the birth canal permits frequent violations of asepsis with only a small percentage of infection, and the milder infections are easily overlooked by the casual observer, tending to give a false sense of immunity and induce carelessness in technic. The present wholly inadequate obstetrical fees discourage the expenditure of time and money in post-graduate study.

Finally, the vast majority of confinements are conducted by men who do not undertake any other class of aseptic surgery and, therefore, have not developed a considerable degree of perfection in technic.

We should together endeavor in every possible way to counteract these retarding influences and, in the meantime, go as far as possible in simplifying the technic in freer blood-supply and quiescence of the organ favoring the formation of the leucocytic wall of infiltration, the chief bulwark of defense. The giving of ergot and pituitary extract by increasing the contractions of the uterus violates one of the first principles of medicine—that the best treatment of inflammation is rest, especially rest of the inflamed organ. We are reminded of

the fact that not so many years ago, surgeons were giving various cathartics to get rid of the tympanites in peritonitis. A good rule to follow when in doubt, is to take nature's cue.

Nourishment—In the absence of peritonitis, the patient should be given as much easily digested, nourishing food as can be assimilated, and an abundance of liquids. This should consist of such foods as milk, cream, egg-malted-milk, cocoa and soft cereals.

Specific Treatment—Most clinicians have abandoned the use of sera as useless.⁴

Curettage—In view of the well-known pathology in these cases and the emphatic teaching in this regard, it is strange that it would seem necessary to mention the curett in the discussion of the treatment of puerperal sepsis. Let us say again, however, that the curett has no place in the treatment of puerperal sepsis. *It is damnable and has probably killed more women than all other things in this connection combined.*

Peritonitis, indicated by pain, rigidity of the abdominal muscles, vomiting, and so forth, should be treated by first, the *Fowler position*; second, *morphine to complete comfort and relaxation*; third, *nothing at all by mouth*; and fourth, *liquids by rectum, intravenously or sub-cutaneously*.

Thrombophlebitis should be treated by keeping the part absolutely quiet and giving the clot an opportunity to organize. The danger of embolism must not be forgotten. In the case of milk-leg, the limb is kept elevated and warm and undisturbed. The treatment in these cases is continued for ten days or two weeks after all symptoms have disappeared.

Abscesses should be incised and drained whenever present. In making a cul de sac drain, it is important to merely steady the cervix with the tenaculum and incise near the cervix, using a sharp knife until the pus flows, to avoid rupturing the pus sac.

I recently heard a case reported in which a cul de sac abscess was opened with the point of scissors. The patient developed peritonitis and died within twenty-four hours.

1. Talbot, J. E., Focal Infection and Obstetrics, J. A. M. A., March 27, 1920. P. 874.
2. Polak, J. O., Amer. Journ. Obstet., Vol. 77, p. 971 and p. 916.
3. Polak, J. O., Pelvic Inflammation in Women—D. Appleton & Co.
4. Amer. Journ. of Obstet., 1918. Vol. 77. pp 926, 964 and 965.

Discussion: D. F. STOUGH, M. D., Geary, Oklahoma.

Mr. Chairman and Fellow Physicians: It may seem presumptuous for me, a general practitioner, to attempt to discuss such an able paper, prepared by an obstetrician, who devotes his whole work to this specialty. That our meetings of the State Medical Society may be a success, and to lighten the labors of those who get up the program, it is the duty of the rank and file to help as far as they can by cheerfully doing the work assigned to them, so I offer no apology for the part I am to take. The paper was ably prepared and not too technical, in fact, just such a paper as is needed by the general physician, for it refreshes our minds upon one of the most important problems that confronts us. If only a thousand of our mothers were sacrificed annually, there would be no need of the writer making an apology. It is not necessary to say that I agree with Dr. Fowler in all that he has said about the need of asepsis, and the general outline of the treatment he has laid down. One condition has been omitted, which is one of our danger signals. When we find the genital tract dry and hot, we have a far greater danger of sepsis, and this condition is often brought about by the too free use of the hands in making repeated vaginal examinations, by manual dilating the cervix and thinning out the perineum. Even the use of a douche at the beginning of labor, by washing away the natural secretions, tends to the same condition. There are cases where I would resort to uterine irrigations, but only in selected desperate cases. In the Paris Journal of Obstetrics and Gynecology for January, 1922, Anderodias reports 152 cases treated by irrigations, using Carol-Dakin's Solution every two to three hours. He had a morbidity of 8 1/2%. I believe that if all cases of puerperal fever were reported, the number would be larger than usually supposed, but owing to danger of undeserved criticism from both the laity and competing physicians, many physicians are slow to confess that they ever have such complications. In over 800 deliveries, I have had four bad infections, but fortunately all lived through without any lasting complications. Dr. Fowler saw one of the women with me. I might prove an alibi in three of the cases. I will mention them to illustrate some of the difficulties with which we in the country must contend. One was being cared for by a woman with an infected finger, commonly called a "run-around." Another had a small boy

with a freely discharging abscess on his leg, and within two days after her confinement, she would twice daily get the little boy on the bed and dress his leg. In the remaining case, when they ran short of cloths, they washed out those already used, in warm water, without any attempt at sterilizing and used them a second time. The last case followed a forceps delivery within three days, while the other three developed from the seventh to the ninth day. It is seldom that we can have the patient properly prepared. Too many use a douche, too few use the enema. It is safe to say that in 60% of the cases the down-coming head forces fecal matter before it, and it is a wonder to me that we do not have more infections than we do. Lately I have seen some one quoted as saying that in about 90% of the cases the infective agent is already present in the vagina. (I cannot recall the name.) If he is correct it behooves us that we do not by carelessness push it into the uterus, and cause an active infection. I usually find I must fill the place of dirty nurse, clean nurse, anesthetist as well as the obstetrician. We trust that this condition can be gradually improved by better education of the laity, or probably by county, state, or national aid furnishing a trained nurse, or even hos- obstetrical practice and in clarifying the principles in the treatment of sepsis.

ETIOLOGY.

Puerperal sepsis is due to the inoculation of the puerperal wound with any pathogenic bacteria, and their growth and extension from that point. The hands and instruments of the physician are still the usual carriers of the infection. In some cases, sexual intercourse, the vaginal douche, self-examination or the tub-bath just prior to or after the beginning of labor are responsible. It is pretty certainly true, also, that in other cases, the bacteria may be borne through the blood-stream from infection elsewhere in the body. ^{1 2} Poor general condition, hemorrhage, prolonged, difficult labor and lacerations are pre-disposing factors. While the fact should not cause us to relax our vigilance, it is important to remember today when the laity are beginning to assume that all infections are due to the carelessness or incompetence of the doctor, that there are some cases of sepsis where the physician is in no way responsible.

PATHOLOGY.

The lesions of puerperal sepsis are

legion, varying from inflammation only in immediate proximity to the infected wound to endometritis, metritis, pelvic cellulitis, peritonitis, thrombophlebitis and embolism. The bacteria may be carried in the blood-stream and produce lesions in any part of the body such as endocarditis, meningitis, arthritis, and so forth.

Wherever the bacteria lodge, there is an effort on the part of nature to wall off the area by a zone of leucocytic infiltration. The prognosis depends very largely upon the degree of success in this attempt. This is an important point to remember in treatment.

DIAGNOSIS.

The diagnosis depends upon the elevation of the temperature and pulse, pain and tenderness in the region involved, altered lochia and increase in the white blood corpuscles and polys. All suspected cases should have a careful examination, especially of the throat, breasts, chest, abdomen and kidney regions to eliminate other possible explanation of the temperature and pulse. Malaria and typhoid should be ruled out by the blood examination and the clinical signs. Repeated chills and a very fluctuating temperature are indicative of thrombophlebitis; if unaccompanied by cellulitis, there are usually few local symptoms in such cases if confined to the pelvis. Abscess is indicated by a continuation of the symptoms, with a mass, tenderness and fluctuation. Polak² found that only seven per cent of cases with a definite exudate resulted in suppuration and required incision and drainage.

TREATMENT.

Prophylaxis—The patient's general resistance should be built up by the proper hygiene in pregnancy. Definite instructions should be given to that end and she should be instructed as to the danger from sexual intercourse, douches, tub-baths or examinations during the last month or six weeks of pregnancy. Focal infections should be cleared up if possible. The patient should be given sufficient rest and nourishment during labor if it is prolonged.

The doctor who attends confinement cases should avoid attending septic cases, if possible. If this is not possible, he should carefully avoid contaminating his hands or clothing.

It should go without saying that the same precautions should be exercised as in any other aseptic procedure in regard to the

hands, sterile goods, solutions, basins and instruments. It should be remembered that touching the outside of the glove with the ungloved hand, or touching the perineum is poor technic. A glove so contaminated should be changed. Merely passing it through an antiseptic solution is not sufficient.

The general practitioner will do well not to get caught in the furor for the various pet measures for interference in labor such as podalic version, manual dilation of the cervix, ironing out the perineum, and the frequent use of forceps and episiotomy. Some of these procedures in the hands of experts, aided by every facility for the highest quality of work, may add something to the refinement of the work, but for the general practitioner, intelligent prenatal care whenever possible, a decided conservatism in the management of labor, a more careful study of the art of the fewer necessary things, a conscientious endeavor to attain the highest possible standard of asepsis in these procedures and unfailing patience will accomplish much better results. Vaginal examinations should be abstained from as much as possible. With experience, abdominal and rectal examinations will suffice in perhaps ninety per cent of cases. In the repair of lacerations in the home, I would advise the free use of alcohol on the wound surfaces before closure.

Active treatment consists of rest, food and fresh air, local treatment being limited to removal of sutures if present, and treatment of raw surfaces with a twenty per cent argyrol or twelve and a half per cent silver nitrate solution.

Rest and Fresh Air—The patient is put in a well-lighted, well-ventilated room, or preferably on a porch, the head of the bed being elevated to promote drainage. A good nurse is placed in charge—no company—quiet is maintained; the patient is lifted on and off the bedpan and is fed by the nurse.

No vaginal examination is made in the acute stage and only the gentlest palpation of the abdomen is permissible, and this as seldom as is compatible with the proper management of the case. The bromides for restlessness or sleeplessness, and morphine for pain are given as needed. The patient is encouraged to lie still and is disturbed as little as possible.

An ice-bag is placed over the lower abdomen. Most authorities give ergot and some give pituitary extract on the theory

that firm contraction of the uterus tends to prevent bacterial invasion by closing the lymph and blood-vessels. ³I do not believe this is correct. It seems unreasonable to argue that these channels are closed enough to form an effective barrier against organisms so small as bacteria. I believe that the sub-involution of the uterus which we see in these cases represents Nature's efforts to put the infected uterus to rest, the pital facilities for all prospective mothers. The soft tissues may be macerated by pressure in long drawn out cases and make a fruitful field for infection, and I do not hesitate to use small doses of petruitin or the forceps, and it seems to me that I have saved the lives of babies, lessened the danger to the mother, as well as saved her long hours of suffering. After delivery, as Dr. Fowler has said, we want rest, no visitors, and the best of care. I often tell the attendants that the more they neglect the mother the better she will get along. I then explain that by neglect, I mean that they should not be too busy trying to do things for their patient. In conclusion I will say, that I would rather trust my wife with a good sensible woman, who would not pretend to know anything but to try "watchful waiting," than with a meddling doctor, who kept himself busy with manual dilating of the cervix, thinning out the perineum, and making almost constant examinations per vaginam; use petruitin at the first showing of the pains, and forceps as soon as they can be applied. Let our motto be: "Don't Meddle; Don't Touch."

Discussion: DR. J. S. HARTFORD, Oklahoma City.

Dr. Fowler, by his continuous teaching and splendid example has raised the standard of treating obstetrics in this city. The raising of the standards here are gradually spreading out over the state until the care of mothers is being placed on a much higher scale. I agree with the essayist in the immediate care of lacerations which occur at the time of labor. If we are careful to remove ragged edges and traumatized tissue and bring together the torn structure carefully, the result obtained will be very satisfactory. I wish to call attention to the fact that localization in puerperal sepsis is usually in the broad ligaments and it is not until the abscessed formation is far advanced that the mass itself can be reached by cul de sac drainage.

Discussion: J. WINTER BROWN, M. D.,
Tulsa, Okla.

I certainly have enjoyed listening to Dr. Fowler's paper, which was very well written and each point well discussed. However, I should like to emphasize prophylactic measures a little more. I always have my own sterile gown, leggings, sheets, cord dressings and towels with me, and do not drape patient until just a few minutes before baby is to be born, therefore have as sterile a field as possible.

Doctor mentioned having some old, clean rags for this work. In this day and age when we can have almost anything we want and most of us have cars, I see no reason for depending on old rags prepared by the patient. We may as well have good things to work with. Would any worth-while surgeon depend on old rags; and I consider every confinement just as important, or a little more so, than most surgical cases. I venture that there are few if any of us who do not have access to a good autoclave.

Some doctor mentioned that he had to be the anesthetist, clean and dirty nurse, as well as doctor. Now honest, men, I see no use for this, except in extreme cases. There are nearly always several neighbor women around, and I have never had any trouble in teaching one of them to open my packages of sterile things as I need them, and I have confined women in all kinds of places, not only in this country but in China. I believe the main trouble is with us, in that we do not have the things prepared to work with.

PROCEEDINGS OF THE OKLAHOMA CITY CLINIC "ROUND TABLE" WESLEY HOSPITAL.

RENAL DIABETES.

WM. H. BAILEY, M. D.

Until a few years ago, when blood chemistry began to be more extensively used, the existence of a renal diabetes was not admitted. Any patient having a glycosuria was considered a diabetic. Then there was a period of years in which these cases with low sugar tolerance, or low kidney threshold for sugar, were thought to be incipient cases of true diabetes. Now most authorities have accepted the existence of renal diabetes as a definite entity. Blood chemical tests have disclosed the fact that occasionally we will find a patient with sugar in the urine that does not have an

increased sugar content of the blood. These cases are similar to those of alimentary, or physiological, diabetes in that they do not show a constant glycosuria, the sugar only appearing in the urine at irregular times.

A case of what we diagnosed as a simple renal diabetes presented himself to the laboratory a few weeks ago. The patient was a middle-aged professional man, who was leading an active business life. His health had always been fairly good except that a few years ago he had considerable trouble with a sub-acute rheumatism. A focus of infection was searched for and several teeth and other suspicious foci treated. The rheumatism improved but would give some slight trouble at times. For the last couple of weeks the patient had been feeling a little below normal and would tire out easily. As a matter of routine his urine was examined. It was found to contain a fair amount of sugar. This particular specimen happened to have been collected in the laboratory about an hour after breakfast. The patient was naturally concerned about this result, it being the first time that sugar had been discovered in his urine. About noon he went to another laboratory and voided another specimen and had it examined. No sugar was found. The next morning specimen was divided into two portions and each laboratory given one to examine. Sugar was reported by both.

We then made a blood chemical test and found his blood to be 0.067 which is well within the limits of normal.

With a slight restriction of the diet the sugar remained absent from the urine at all times of day. As there were never at any time any clinical symptoms of diabetes, as the blood sugar was not increased and as the sugar in the urine was not a constant finding, we came to the conclusion that this was a case of renal diabetes.

ABERRANT SPLEEN.

A. L. BLESCH, M. D.

A woman 30 years of age presented herself to the Clinic complaining of soreness and continuous though moderate pain in the right lower abdominal quadrant. This syndrome had been diagnosed as chronic catarrhal appendicitis by every physician whom she consulted. There existed no history of any attacks of sufficient severity to put her to bed. Patient made the statement that the ingestion of food increased

the pain and caused a tender mass palpable to herself to appear in the lower abdominal quadrant. She had never had elevation of temperature or nausea. The condition had existed from her earliest memory. Exercise markedly increased her discomfort. The urinary function had never been disturbed.

The clinical examination was entirely negative except for the tenderness mentioned above and a tender, smooth, slightly movable mass, round in outline and semi-spherical in shape which was located in the appendiceal region. Blood count and uranalysis were negative.

Diagnosis: Speaking for appendicitis were the symptoms of tenderness and a mass located in the appendiceal region. Against appendicitis, as the cause of her symptoms, were:

1. Absence of distinct attacks.
2. Absence of nausea.
3. Absence of fever at all times (temperature had been frequently taken).
4. Absence of Leucocytosis.

5. Variability in size of mass, movability of same and influence of food ingestion on its size and on the degree of pain.

Neoplasm or cecum could not be ignored. Malignant neoplasm, however, was practically eliminated by time element. Benign tumor, however, might well give rise to above syndrome, the increased intestinal peristalsis incident to food stimulation elevating a portion of cecum containing a benign neoplasm and making it more easily palpable as well as increasing pain. We were unable to eliminate benign tumor of cecum either clinically or by x-ray.

Exploratory operation advised and accepted. Median lower incision revealed a semi-spherical mass of the size of a split orange, ligamentously united to ileo-cecal mesentery in ileo-cecal angle, the surgical removal of which was easy. General exploration of abdomen and pelvis was negative. Microscopic examination of specimen showed it to be normal splenic tissue which it also microscopically resembled. Relief complete and permanent.

Remarks: Known to be an aberrant spleen because of its location and the fact that the spleen was "at home" and normal. Why such an aberrant spleen showing normal histology should be painful can be explained only on the hypothesis that in its unsheltered location it was exposed to unaccustomed trauma.

As to the frequency of this anomaly I

have no definite data at hand. An incomplete search of the literature revealed no case, though it has no doubt occurred in the hands of other surgeons.

The origin as in all aberrant structures goes back to the embryology of the gland. The spleen is of mesoblastic origin as shown upon the peritoneum which appears as a thickening of the dorsal mesogastrium about the fifth week and lies in close relationship with the stomach. This anlage is not far from the primitive colonic bud and in the embryonic migration of the colon from left to right it is possible that some of the colonic epithelium from which the spleen is developed may be carried along with it. The fact that this aberrant spleen was found at the angle formed by the ileum and ascending colon in just the location one would expect it to be following colonic rotation, speaks for this origin.

FARAHEAD ON HOSPITAL WORK AT MUSKOGEE.

The Manhattan Construction company is four weeks ahead of schedule in the construction of the Oklahoma Soldiers' Memorial hospital on Honor Heights.

It is also several weeks ahead on the municipal hospital to the north of the state building. The city hospital was started three weeks after the larger building, but such good time is being made that the relative percentage of work done is practically the same as on the state hospital.

Foundations now are being put in for the eight smaller buildings that will complete the establishment for the care of Oklahoma's sick and wounded veterans. Material is on the ground for these buildings which are a vocational training building, a nurses home, a medical officer's residence and five cottages for attendants.

NEW AND NONOFFICIAL REMEDIES.

During July the following articles were accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

The Abbott Laboratories: Neocinchophen-Abbott Tablets 5 grains.

Louis Hoos: Hoos Albumin Milk.

Mallinckrodt Chemical Works: Benzyl Benzoate—M. C. W.

THE MUSKOGEE SOLDIERS' HOSPITAL.

Much publicity has recently been given in the press about the hospitalization of insane negro soldiers in the new hospital being constructed at Muskogee. After investigation the report was found to be false. Tuskegee, Alabama, through its sounding like Muskogee being mistaken therefor.

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive the Journal should call for immediate notification of the editor, 508 Barnes Building, Muskogee, Okla.

Local news of possible interest to the medical profession, notes on removals, changes in address, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application. It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

EDITORIAL

SHALL WE SURRENDER TO GERMANY?

It seems we are about to lose the most important advantage gained by our participation in the World's War. By the action of our Government we have been freed from paying tribute to the subsidized and protected German dye and chemical monopoly. The most important act in securing this result was the sale by the Alien Property Custodian of 4700 patents to the Chemical Foundation, Inc. The Foundation granted licenses to any firm that could show its reliability to manufacture any of these products. The result has been that we now have an American dye and chemical industry whose products are sufficient for our needs and whose quality is equal or

in many instances superior to the German product.

This result has not been accomplished as easily as it sounds, for in many instances the patents as recorded were inadequate or non-workable and considerable research was necessary before the products could be successfully manufactured. Since the armistice the greatest aid to this industry has been the embargo on foreign dyes. As is generally known most of the synthetic drugs used in medicines are byproducts obtained in the manufacture of dyes from coal tar and they can be produced successfully and economically only in connection with dye production. The embargo on dyes is about to expire and the Senate has refused to extend the time. The proposed tariff bill contains duties on imported dyes but American manufacturers claim that no amount of tariff will protect them in competition with the Germans. They say that with the high efficiency of the German factories, the great inequality of the money of the two countries, making comparative costs of labor and material only a small fraction of such costs here, and the fact that the industry is subsidized and protected by the German Government, makes competition impossible. The American manufacturers would in a very short time be compelled to go out of business and then we could expect a return of the high prices charged for the German products before the war.

Then in case Germany went to war with any nation that would interfere with her ocean commerce we would be confronted with the same condition we faced in 1914. It would not be necessary for us to be at war with Germany for this to occur for it was only after we declared war and passed the Trading With the Enemy Act that we obtained any relief.

The memories of the people, the press and our lawmakers are notoriously short. During the war when the lack of dyes and necessities was acutely felt the newspapers devoted pages of space and the halls of Congress sounded with long winded speeches deploring the situation and urging American manufacturers to build up a home industry to care for our wants. Under promise that they would be protected from unfair German competition after the war our manufacturers responded to the call and spent their time and money in building up the industry to where it fully meets the needs of the country.

Now the Senate refuses to extend the

time of the embargo and on top of this comes an executive order for the Chemical Foundation to return the patents to their former owners. And we have scarcely a protest in Congress and only rarely do we see a paragraph in a newspaper on this subject. Their columns are devoted to discussions of strikes, the latest scandal, and some flapper's opinion of bobbed hair, while our citizens stand to lose their money and business and our sick will be left to the tender mercies of the drug monopoly of our late enemies.

P. P. NESBITT.

THE PERILS OF THE SUMMER VACATION.

In this day of steam, electricity and gasoline, and the all-consuming desire to go from HERE to SOMEWHERE ELSE in search of the pot of gold at the rainbow's end it is well to remember that sometimes HOME is the best health resort, and that, if we find it otherwise, it may not be so much because of WHERE we live as HOW we live.

We of the Southern and Central states, viewing the annual summer hegira to Canada, Colorado, California, Maine, Massachusetts and Minnesota, and other regions farther and nearer, where the breezes are reported to be cooler, the scenery more beautiful and climate more salubrious than in the dreary spot where we are doomed to sweat and toil, are sometimes prone to forget what those conditions are which make for low morbidity and mortality rates. The physician in active practice in our section of the country is sure, however, to have his memory refreshed during the summer and early fall by the incidence of disease among the returning pilgrims. He sees the typhoid fever contracted at the purling brook, or at the foot of the gloriously picturesque, but infected, watershed; or transferred to the picnic table by the fly wafted on the boasted balmy breeze; or the malaria acquired at the camp on the lush meadow by the tree framed lake; or the dysenteric infant who quaffed the milk at the wayside farm, or had his thirst assuaged at the purling spring up the forest path, or at the water cooler up the aisle of the passenger coach; or the illness that is a legacy of the swimming hole that was more beautiful than good. True he can not trace each malady to its specific course, but behind each he sees some slip in sanitation which shows that even the great outdoors,

once contaminated by the presence of man, may lose its former benignant aspect, and visit the ills of the flesh on the incautious or the ignorant.

It has been reliably and credibly asserted that the healthiest dwelling place is a large town or small city, where there is intelligent sanitation, and that geographical location has little to do with the case. Such a place has a safe water supply, efficient surface drainage and sewage system, dairy inspection and garbage removal, and perhaps a considerable proportion of the streets paved. If one lives in such a town, or can be assured of similar protection, has a housekeeper who has a knowledge of the choice and preparation of a summer dietary, appreciates the value of swatters and fly screens, recognizes the bath tub or shower as the only indispensable swimming pool, and has access to the breezes of nature or to those coaxed by an electric fan, one may well hesitate before permitting his family, especially if it contains children, to go elsewhere with the idea of conserving or improving health. And one may well ask, if, in addition to the advantage enumerated above, there can be duplicated the opportunity for resting and dressing as suits one's convenience. If not, and health is the quest, HOME is the best place to find it.

Editorial Notes—Personal and General

Dr. C. Stevens, Wilson, has moved to Madill.

Dr. F. Leroy Carson, Shawnee, has motored to Colorado to spend his vacation.

Dr. J. W. Adams, Chandler, leaves this month for Detroit and points in Michigan.

Dr. C. P. Mitchell, Lindsay, spent several weeks in Mineral Wells, Texas, the past month.

Dr. J. H. Plunkett, formerly of Porum, has located in Wagoner, where he will practice medicine.

Dr. B. W. Ralston has returned to Lindsay after an absence of seven months in Hot Springs and St. Louis.

Dr. A. S. Hagood, Durant, seems to have grabbed the honors as the best tomato grower of Bryan County.

Dr. J. M. Bonham, Hobart, motored this week to Tucumcari, N. M., where he will spend a few weeks' vacation.

Dr. R. E. L. Rhodes, Tulsa, motored to Rochester, Minn., for a fortnight's stay, after which he will tour California, Washington and Oregon, returning in October.

Dr. Marshall W. Weir, Oklahoma City, is motoring to Rochester, Minn., where he will spend several weeks' vacation.

Dr. J. B. Hampton, Commerce, returned recently from a motor trip into the Lower Rio Grande Valley in Southern Texas.

Dr. A. J. Stephenson, Lawton, has returned from his vacation spent motoring through Yellowstone Park and to Salt Lake City.

Dr. Allen Lowry, Blackwell, who has been suffering with internal trouble, has placed himself in the care of Dr. Hurstler of Halstead, Kansas.

Pawhuska' City Hospital. The city of Pawhuska is now building a municipal hospital to cost \$65,000, to be completed about September 15th.

Dr. and Mrs. E. F. Milligan, Geary, and the children, Donald and Mary Jane, accompanied by Dale Truman, returned from Colorado this week. They had been away over two weeks.

Dr Chas. T. Schrader, Oklahoma City, spent his vacation near Noel, Mo. He returns telling of wonderful fishing in the Cowskin river and claiming the largest bass caught there this season.

Dr. G. M. Manor, Columbia, Mo., who recently formed a professional association with Dr. W. L. Bonnell, Chickasha, is caring for all of Dr. Bonnell's practice while he is on a month's vacation in New Mexico.

PIONEER DOCTOR IS CALLED HOME.

Dr. Vance, Former Head of Medical Association, Dies Here.

After nearly a half-century of usefulness in the practice of medicine, twenty years of which he spent in Checotah, Dr. Bascum James Vance died at the P. and S. hospital, Muskogee, at 2 o'clock, July 27th.

Pneumonia, developing out of an illness of a year's standing, resulted in the death of the pioneer physician. Dr. Vance was at one time president of the Oklahoma State Medical Society and was very active in the work of this association and in medical affairs in McIntosh county.

Born in Boone county, Ark., 69 years ago, Dr. Vance received his medical education in Vanderbilt University and Chicago Polyclinic. He practiced in Arkansas for many years, but removed to Checotah twenty years ago. He at once assumed a position of prominence in the north McIntosh county town, and was widely known in Masonic circles as well as in civic matters.

Dr. Vance is survived by Mrs. Vance and seven children, who are: H. M. Vance, Tahlequah, Okla.; Mrs. Lee Kirby, Harrison, Ark.; J. M. Vance, Muskogee; Mrs. Walter Hensley, Mrs. Waldo McIntosh and Mrs. Hugh Gladden, Checotah; Mrs. Tom Reed, Austin, Texas.—Times-Democrat, July 27, 1922, Muskogee, Okla.

ARMY MEDICAL DEPARTMENT UNITS.

Extract from Army and Navy Register, July 1, 1922:

"The Surgeon General of the Army has been authorized to proceed with the organization, with reserve personnel being enrolled under branch assignment of the following medical units. Three Army medical headquarters, 36 surgical hospitals, 45 evacutory hospitals, 3 convalescent hospitals, 3 Army medical laboratories, 9 Army medical supply depots, 12 hospital center headquarters, 165 general hospitals, 12 convalescent camps, 37 hospital trains, 2 intermediate medical supply depots, 24 station hospitals, 2 communication zone medical laboratories, 3 air service physical examination units, 2 section medical headquarters, 1 general medical laboratory, 5 general dispensaries, 1 specialists' group, and 1 general medical headquarters. The majority of these units will be organized at medical schools, hospitals, and professional centers throughout the country. Many of the units saw service during the World War and are preparing to reorganize and perpetuate their old designations as provided for in the act of June 4, 1920. Members of the reserve corps are now manifesting considerable enthusiasm with reference to the proposed organization of these units. As soon as properly organized by the surgeon general they will be turned over to the control of corps area commanders within whose territory they are located. It was preparedness work of this character and the hearty co-operation received from members of the civil professions that enabled the medical department to operate effectively with such promptness upon our entrance into the war, these base hospital units being the first organizations of the Army to embark for service overseas."

ROBERT B. HILL,
Major, M. C., U. S. A.

PRESSURE ULNAR PALSY.

In a case of osteoarthritis of the upper lumbar spine a plaster of paris body jacket (not including the shoulders) was applied. This was removed after six weeks, and another was applied. After having worn the second cast with no untoward effects for three weeks, the patient's right hand became weak and numb. She had no feeling in the thumb and fourth and fifth fingers. She was in the habit of sleeping with the arms over the head, and awakened one morning with the edge of the cast pressing against her right arm, i. e., she was lying on that arm. When she was seen the next morning, a typical ulnar pressure palsy was discovered. The cast was trimmed under the right axilla, and the patient referred for massage, active and passive movements, and re-education. Two months from the date of onset of the trouble, she was completely recovered. Philip Lewin, Chicago (Journal A. M. A., April 15, 1922), states that he has not been able to find a similar case recorded in the literature.

DERMATITIS HERPETIFORMIS IN CHILDREN.

Two cases are reported by Edward A. Oliver and Charles J. Eldridge, Chicago (Journal A. M. A., April 1, 1922). One of the patients was only 18 months of age; the other was 10 years old. Fowler's solution caused the eruption to disappear.

CONTINUED DEMONSTRATIONS IN THE CONTROL OF MALARIA.

"The primary object of the International Health Board and the allied Federal and state health organizations in undertaking malaria work in 1916 was to prove to small towns, villages, and rural communities that malaria can be practically eradicated at per capita costs which make elimination cheaper than harboring the disease."

"The campaigns were based upon two scientific facts: (a) malaria can be communicated only by the bite of the Anopheles mosquito, and (b) almost all sufferers from malaria can be cured by the administration of quinine in proper doses over a sufficient period of time. The prevention of mosquito breeding by drainage, by surface oiling of standing water, by the use of fish which eat the mosquito larvae; the protection of people by screening beds and houses, by removal of houses from the vicinity of breeding places, by the killing of adult mosquitoes; the use of quinine when mosquito control is too difficult, have been tried in various combinations, most of them with a success that has been strikingly convincing.

"For the past two years demonstrations have been carried on in conjunction with local authorities, state boards of health, and the United States Public Health Service. During 1921 in nine southern states new demonstrations were undertaken in 26 localities, while supervision of work previously inaugurated was continued in 35 places in ten states. Reports indicate that substantial reductions in the prevalence of the disease were effected at an average per capita cost of \$1.01. Reductions secured by demonstrations made in 1920 were maintained at an average cost of 25 cents per capita.

"Investigations as to the adaptation of anti-malaria measures to tropical conditions were started in Port Rico and Nicaragua. Preliminary studies were also made in Argentina and elsewhere to discover variations in conditions to be dealt with. Experiments in treatment by quinine were concluded in Sunflower county, Mississippi, where by experimental methods a standard dose of this drug calculated to protect individuals had previously been worked out and has now been made available to the public through commercial channels at a cost of \$1.95.

"In addition to continued investigations in various methods of mosquito control, including the use of fish, surveys were undertaken in two regions in the South to determine the prevalence of malaria and the part which it plays in impairing the health and efficiency of a given population. One report for an area in Southeast Missouri was completed and confirms the belief held by many that this disease, although less severe than in former years, is still a crippling malady which not only impairs vitality, increases suffering, depresses the community spirit, but adds directly and substantially to the death rate."

THE RESPONSIBILITY OF THE PUBLIC.

"The cry is frequently heard that this government service or that 'must be taken out of politics.' In one sense this is absolutely essential to efficiency. A public function which calls for technical expertness is hopelessly handicapped if it be treated as the spoils of a political boss or of a victorious party machine. To no public service does this apply more strikingly than to a department of health. The moment efforts are made to

influence appointments, promotions, salaries, policies, law enforcement, by political pressure for individual or party ends the demoralization of the work begins. The degree to which such things are possible is an index of the intelligence, spirit, and character of any community.

"Yet in another, the original, meaning of politics public health ought to be always in politics. The safeguarding of the health of the people is a community task and responsibility. It is a proper and important subject for public attention and discussion. Officials are in duty bound to present their programs and budgets to boards, councils, and the public and to give convincing reasons for the measures and expenditures that are proposed. One of the essential qualifications of a successful health officer is the ability to explain his policies so as to win support for them."

"But obviously the busy health officer and his assistants cannot assume sole or even the chief responsibility for creating and maintaining the popular understanding and backing essential to the success of modern and progressive health policies. Elected officials, public-spirited private citizens, the schools, public and private, the press, chambers of commerce, women's clubs, social agencies, voluntary health associations are the organs by which counties, towns, cities, and states should be kept constantly conscious of health measures until these have become a part of the accepted and well-administered routine of daily life. Then vigilance becomes the price of safe-guarding what has been achieved and the means of supporting new plans for further advance. In the long run representative government a community will get the kind of health administration that it deserves."

AID TO HEALTH TRAINING AT HOME AND ABROAD.

Contributions were made during 1921 to various institutions and government departments in the United States and in foreign countries for the Furtherance of public health training.

To New York University the sum of \$35,000 was given to aid in establishing a clinic for the teaching of personal, infant, school and industrial hygiene, and for the remodeling and equipping of a building as a museum to display models and other exhibits in sanitation, ventilation, industrial hygiene, and housing.

"One essential kind of training takes the form already mentioned of special intensive courses for persons who are actually engaged in health work. State departments of health and the United States Public Health Service are conducting institutes to meet this need. In several cases the Foundation through the International Health Board gave funds to supplement the appropriations of state boards of health for institute teaching. A small contribution was also made to a state department which is testing the possibilities of correspondence instruction for local health officers and their staffs.

"The Pasteur Institute in Paris as a result of the war was seriously threatened not only with curtailment of its activities, but with a lack of new workers who should receive training, engage in research, and thus be prepared gradually to assume responsibility for the future of this world-famous center and its several branches. To supply fellowships for a transition period and to help defray the costs of training young assistants the Foundation gave in 1921 the sum of \$30,000 and pledged other sums on a diminishing scale for the two subsequent years."

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JOINT DRAINAGE WITH RESTORATION OF FUNCTION.

THOMAS J. LYNCH, M. D.,
Okmulgee, Okla.

Suppurative Arthritis up to and including the first part of the year 1917 presented one of the most difficult and discouraging problems of surgery. The mortality of the severe cases of infection was high, and even in the more favorable cases re-establishment of function was often prevented by partial or complete ankylosis.

This was due to the fact that the anatomical construction of most joints rendered their irrigation very uncertain, and the use of tubes produced necrosis and did not drain. Taking the knee joint as an example, it being the joint which sustains 62% of all joint wounds and one of the most resistant to treatment, infection spreads backward sooner or later and as Tuffier has demonstrated no amount of irrigation of the anterior cavity will affect suppuration of the posterior pouches. The dislocation method, while a life-saving measure, resulted in more or less painful ankylosis and was a terrible experience for both the patient and the surgeon.

The changes that have ensued in the principles of treatment since 1917 have been so striking that to accept them means the complete upsetting of our ideas on the subject. Some of the procedures are so radical that they are actually astounding. Having in view the early and complete re-establishment of function, Willems of Hoojstade, Belgium, urged that post-operative immobilization of infected joints should not be employed and demonstrated the correctness of his claim by a series of brilliant results. In doing this he completely revolutionized the treatment of joint injuries and gave to the profession the present method of functional drainage. I realize that the method of Willems will only be generally accepted by demonstrating its superiority over all forms of conservative measures, so I am going to ask

you to bear with me that I may quote a few statistics.

Willems, in an early paper written during the war, gives the figures in regard to the final outcome of this treatment on 100 consecutive cases of knee joint infections. Of these 100, eighteen were of a violent purulent type, chiefly streptococcic. In the 100 cases there were no deaths and no amputations—there was one resection and two stiff joints resulted. Taking his figures as correct, and the experience of others have amply proven that they undoubtedly are, we see that in 100 cases of knee joint infection he has given 97 patients useful, movable knee joints. Just as a comparison, in one of the U. S. evacuation hospitals early in the war, out of 82 patients with knee joint injuries, 16 remained infected at the time the report was made, 9 died, 3 had amputations, 7 suffered complete ankylosis and one resection was made. In analyzing this series of cases, in order to find the marked difference in the results obtained, the ill results are ascribed to half-hearted attempts at mobilization and the fact that due to early evacuation the parts were immobilized for transportation.

My own experience has been confined to five cases of purulent arthritis, which I have treated from the beginning to their completion. Two were of the knee joint. Two of the elbow and one of the ankle. While this comparatively is a small number, it is sufficient for the purpose of analyzing the results obtained.

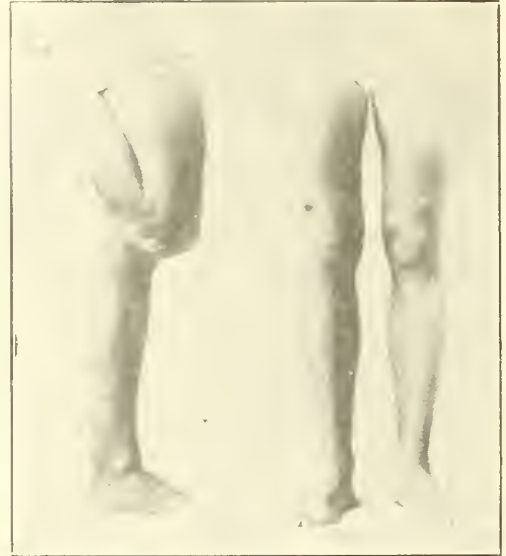
In the treatment of these cases the method of Willems was followed in minute detail. Quoting from Willems' writings on the subject and using the knee joint as illustrative, it is as follows: Unilateral or bilateral arthrotomy is indispensable. The joint must be widely opened. The patella is raised and the joint cavity washed out, preferably with ether. Hemorrhage is controlled and the wounds covered with aseptic dressings. No immobilizing appliance is applied and under no condition is any drainage material placed in the joint.

Mobilization is begun immediately, the first flexion and extension being made before the patient has entirely recovered from his ether. From then on active motion is repeated at least every two hours during the day and several times during the course of the night. As soon as possible, usually the second day, the patient is gotten out of bed at the two hour intervals and every means used to encourage him to use the limb.

My cases of knee joint infection were ideal for treatment by this method. The first case, a purulent staphylococcal arthritis was first seen five days after a puncture wound of the knee joint produced by the prong of a pitchfork, while the man was at work in a stable. When seen his temperature was 102, the leg was spasmodically fixed and swelling of the joint was severe. Frank pus was removed by aspiration. The joint cavity was washed out with the normal saline through a large size trochar. Twenty-four hours after this procedure, the symptoms had become intensified and bilateral arthrotomy was performed, the Willems technique being religiously followed. On the second day the man was out of bed for a few steps every two hours and on the seventh day had progressed to where he was pushing a wheelchair patient up and down the ward. Six weeks from the time of operation the patient was discharged from the hospital, the soft tissue wounds having been barreled and a closure made, with a painless functioning joint.

The second case was the result of an injury sustained by having the knee lacerated beneath an overturned motor truck. There was no fracture demonstrated. There was a large penetrating wound on the internal lateral surface of the joint. This man had been given first aid treatment which had consisted of sewing up the contused and lacerated skin. He came under my care the second day after his injury. He was crying out with pain, his leg rigidly fixed, temperature 101 and pulse 130. Bilateral arthrotomy was performed at once. The contused and lacerated soft tissue was cut away and the incision extended along the border of the quadriceps allowing free access to the joint cavity which was filled with blood. This was washed out with saline followed by ether and the patient returned to bed to begin the Willems routine. Immediate joint closure being deemed unwise on account of the extent of the injury and the severity of the reaction which had been presented by

the patient. Secondary suture of the superficial tissues of this knee was not a success, as the defects of tissue were so great that satisfactory closure could not be made. The knee was healed in three months with rather extensive scarring but with perfect function as the accompanying illustration will show. It may be of interest to remark that this patient was able to play as forward upon the State University Basketball team this past season.



Views taken 11 months after injury. Complete return of function has been obtained.

As a result of the treatment of these men I was deeply impressed with the following.—that frequent mobilizations were necessary—that when the interval was lengthened to many hours, that increased pain and a temperature reaction promptly followed. This, in one of my cases, occurred on account of the tender sympathy of a kind-hearted nurse who allowed the patient to rest throughout most of one night. That the mobilization must be active not passive. When the patient has been instructed in how to use the limb and properly impressed as to the ultimate object to be attained, that he will flex and extend the limb with surprisingly little pain. Passive motion will be found very painful. When walking is first attempted, the patient will probably faint, and will believe and insist that it can't be done,—as a matter of fact it can and must be done. By the use of sufficient perseverance on the part of the surgeon he will soon find that he can hobble around the bed, provided of course, the temperature is under control and there be no major fracture present.

In attempting to discuss the treatment of other joints by this method it should be borne in mind that the knee and the elbow are the ideal ones for treatment. The drainage being proportionate to the range of movements in the joint, it can be seen that the wrist and ankle are not adapted to this method. The ankle infection treated by me was a total failure, as far as restoration of function was concerned. It was undertaken in 1918, before Willems published his first article in English. The operation was made for the cure of a severe arthritis, which was secondary to an Hemolytic Streptococci Mastoiditis. It was no doubt ill advised. I found I could not get adequate exposure of the joint and did not get sufficient drainage from the range of motion to produce a secession of pain sufficient to allow me to induce the patient to continue his efforts.

The infections of the elbow joint, one a low grade staphylococcal infection following an attack of influenza, yielded to a unilateral external arthrotomy, the incision made was four inches in length over the external condyle of the humerus; the other was a mixed infection with sinus formation which had existed for some months and had no doubt started as an osteomyelitis. The elbow joint was thoroughly cleaned of all debris and with the large free opening it was surprising to see with what little pain the patient began its immediate use. Healing was complete in sixty days and while the range of motion is somewhat limited, he has no pain.

It is my belief that while the method of Willems was a product of the war and intended primarily for the treatment of suppurative arthritis following wounds of joints, that he has given us a surgical principle which may be adapted to any form of infective arthritis,—particularly of the knee or elbow, with results that not infrequently will be perfect.

Discussion: F. L. CARSON, M. D., Shawnee, Oklahoma.

During the last five years almost revolutionary changes have been made in the treatment of suppurative arthritis. The admonition of Matas relative to joint infection, "rest, absolute, physiological and anatomical rest," and Murphy in 1912 who stated "when we have an infection of synovial membrane, if we would maintain a separation of the inflamed surface, if we would avoid synechiae, we must keep these surfaces apart by reducing the virulence of the infection at the earliest possible mo-

ment, by relieving the pressure of the products of infection and by keeping the surface away from the external air. This is a law. "If you expose any serous surface to the air for any considerable length of time the endothelial lining is always destroyed and ankylosis results. It is a far cry from these two eminent authorities, to the advice published by Willems in 1917 and so ably discussed by the present essayist.

In his first American article on the subject (*Surg. Gyn. & Obs.*, May, 1919, page 546), Willems advised against any irrigation of the joint after arthrotomy.

My experience has been limited to four cases, all knee joint infection. Like the essayist I was struck with the brilliant termination of Willems published cases and remembering the terrible results of the old Peck and other methods of treatment, was induced with fear and trembling to adopt the new procedure.

The final outcome in my few cases has been good. In no instance has there been full restoration of function but neither has there been ankylosis. The range of motion has been from twenty-five to ninety degrees. The greatest difficulty has been in securing the proper co-operation of the patient and nurses, for I am free to say that all my patients have complained of pain on active motion. On the whole I believe the procedure has been a distinct improvement and possibly as we come to more fully understand the underlying principle our results will be better.

Discussion: C. C. HOKE, M. D., Tulsa, Okla.

I have enjoyed Dr. Lynch's paper very much and feel that he should be congratulated upon the results he has obtained in the treatment of septic arthritis cases by the Willems method.

In the treatment of purulent arthritis our aim must be not only to cure the infection but also to give the patient the best possible functional results.

These cases are always serious and difficult to treat. Even if we succeed in clearing up the septic process the patient is likely to have more or less disability as a result of ankylosis. Drainage material introduced into the joint will not completely drain all portions of the joint cavity and will increase the danger of ankylosis.

There can no longer be any doubt that in selected cases of purulent arthritis, especially where there are no gross extra articular lesions of bone or soft parts, the Wil-

lems method of treatment is superior to any other method at our command, both as to the rapidity of healing of the diseased joint tissues and the degree of joint function obtained.

Obviously the method is more applicable to certain joints, especially the knee and elbow, where the range of motion is extensive. But just as maximum results in the treatment of septic wounds by the Carrel-Dakin method can be obtained only by rigid adherence to detail, so with the Willems method of treating suppurative arthritis the results will be disappointing unless all details of the method are strictly adhered to.

I would emphasize the following points: Free drainage by means of extensive arthrotomy wounds.

2. Through primary cleansing of the joint with removal of any loose fragments of tissue or foreign bodies and the control of hemorrhage.

3. Mobilization—early, active and frequent with a gradual increase in the range of motion.

4. This method is not applicable in the treatment of tuberculosis arthritis or in the early stages of acute septic arthritis before suppuration has taken place.

CHOLECYSTECTOMY WITHOUT DRAINAGE.

FRANK H. MCGREGOR, M. D.,
Mangum, Oklahoma.

Before going into detail and setting forth the advantages attained by the operative technique indicated by the title of this paper, it might be well to mention some of the many conditions for which removal of the gall-bladder is the proper procedure in affording the most permanent relief.

There is no field of surgery in which greater progress has been accomplished within the last decade with such correspondingly gratifying results as in operations upon the gall-bladder and biliary ducts.

The pathology of the biliary apparatus demanding surgical interference ranges all the way from simple catarrhal cholecystitis through the varying degrees of more pronounced infection, stones, cicatricial stenosis, etc., to malignancy.

As a more rational understanding of the far-reaching effects of these conditions became more universal among surgeons, the

operative technique became improved and the end results became better. The gradual progressive steps in gall-bladder surgery have been personally observed by every surgeon of more than ten years experience. This does not mean to imply that any of the later operations were not done years ago, but that they have only in recent years been accepted and performed generally. There are many good surgeons operating today who tenaciously limit their treatment of the gall-bladder in practically all cases, to simple drainage. But, in justice to them, I wish to state that it is not because they do not have the dexterity to perform the more difficult cholecystectomy, but due to an honest conviction that the older method is more proper. Then, we have a greater majority of modern surgeons performing cholecystectomy, but still resorting to drainage of the gall-bladder area through the abdominal wall. We also have a small, but ever increasing percent of surgeons who are doing cholecystectomies and closing the abdomen without drainage, obtaining splendid results with a minimum amount of post-operative discomfort.

It is not so many years since we drained for nearly every abdominal operation. Following hysterectomies, salpingectomies, appendectomies without actual pus formation, removal of mesenteric cysts, etc., with the consequent dreaded adhesions that used to be such a real source of worry to the surgeon and a bogey to the prospective patient. Even to this day we have patients using the adhesion argument in giving excuses against the removal of a simple catarrhal appendix. But we eventually abandoned draining for anything less than an abscess or an active peritonitis, with a resultant increase in post operative comfort to the patient, and a more quick convalescence and a greater personal satisfaction in our abdominal work. All these progressive successes without drainage, in the lower abdomen, have gradually stimulated the surgeon to more daring steps to eliminate drainage entirely from abdominal surgery, except of course when an active suppurating condition is existing in the peritoneal cavity. Thus, recently a great number of surgeons of unquestionable ability have adopted as a routine cholecystectomies without drainage. Personally, I have not come to the point where I have adopted it as a routine procedure, but my percentage is gradually rising as I am becoming more familiar with the comparative results.

My attention was first attracted to this technique during the great war, and I employed it first in the spring of 1919 while serving as Chief Surgeon of a British Base Hospital. Since returning to America and observing the reported results of such men as A. Murat Willis of Richmond, and H. M. Richter of Chicago, I have more frequently used this technique, without, however, establishing it as a routine practice. But the results have been so uniformly good that we have employed it in twenty-three select cases within the past year with such gratifying results that I have become enthusiastically in favor of a more general adoption of the technique. Of course, my own series of cases is too small to set up as criteria. But my observations of this limited number of cases corresponds so favorably with the reported results of surgeons who have had a large number of such operations that I feel my work is worth reporting.

The outstanding advantages of cholecystectomy without drainage, as has been observed and noted by me, are, a smooth post-operative condition of patient, a minimum amount of gastric and abdominal distress, a slow and more regular pulse, less nausea, a minimum amount of adhesions, non-irritation of skin by bile, a primary healing of the incision wound, no soiled dressings and a pleasant, smiling and grateful patient.

Recently, in advocating before a Medical Society, cholecystectomy without drainage, the objection was raised that there was danger of the ligature on cystic stump slipping with a resultant spilling of bile in the peritoneal cavity. There is no more danger of cystic duct ligature slipping than a ligature on an ovarian, uterine, or other artery and probably the danger is decidedly less, due to the fact that the blood pressure in an artery the size of the cystic duct is far greater than the bile pressure in said duct.

Then, again, as we all know, drains set down anywhere on a suture or a ligature has a tendency to produce fistula. This very thing alone often accounting for the displacement of the ligature and the subsequent flowing of bile through wound that we so often see following cholecystectomy with drainage. Therefore, your duct without drainage is not so liable to leak as it is with drainage.

Then again, if we accept the theory that removal of the gall-bladder results in a compensatory dilation of the common duct it is perfectly obvious that the sooner the bile ceases to regurgitate through cystic

stump the sooner this compensatory dilation takes place, with a return of biliary function approaching normalcy through a substituted condition. And this compensation, as we all have observed, is often delayed by a patentency of cystic stump developing following the placing of drainage. It may be that I am too enthusiastic about the results of this especial technique, but I am thoroughly convinced that as far as its effect upon the post-operative comfort and early convalescence of patient is concerned, it marks the greatest advancement that has been made in gall-bladder surgery in recent years.

LOCAL ANAESTHESIA IN GENERAL SURGERY.

W. P. FITE, A. B., M. D.,
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Since the beginning of medicine, the search has constantly been for a local anaesthetic with such properties as to be useful surgically. Not until Bennet in 1874 first demonstrated the anaesthetic properties of cocaine was any appreciable advance made.

The first advance in its actual use as an anaesthetic was in its surface application to the eye, nose, throat and larynx. Gradually its uses extended to the realm of surgery, through the use of the hypodermic syringe invented by F. Rynd of Edinburgh in 1845. But, because of its toxicity, its popularity in surgery was impeded until the discovery of adrenalin within the last few years.

Einhorn, in 1905, introduced the synthetic anaesthetic novocain, very similar in its anaesthetic action to cocain, but from five to seven times less toxic, and capable of being boiled without injuring its strength. In the past decade, the combination of this agent with adrenalin has become the local anaesthetic of choice practically the world over, and has opened up almost the whole of the realm of surgery to the possibilities of local anaesthesia.

Adrenalin gave a great impetus to the use of local anaesthesia by providing the action of constricting the vessels in the field of the injection, thereby greatly retarding the absorption of the drug. This action both prolonged the action of the drug and greatly increased the size of the dose that could be given with safety.

The anaesthetic solution is administered through hypodermic needles of various sizes and lengths. Wherever the skin is to be punctured, a small intra-dermal wheal is made with a fine needle. This produces an anaesthetic area of skin through which longer needles of larger size (the writer uses size 22 from 3 cm. to 9 cm. in length) may be painlessly introduced. The ordinary 10 CC Luer syringe or some of the self-filling apparatuses now on the market may be used.

It is always best to anaesthetize the deepest layer first, because there lie the larger nerve-trunks, and, as considerable fluid is often injected into an area, the thickness of the tissues is increased. This, if it occurs in the outer layers first, makes it more difficult to localize the needle point in the deeper layers.

The operator accustomed to local anaesthetic methods can tell quite accurately the location of the point of his needle in the tissues. During the injection, the needle should always be moving, and care must be taken not to inject the solution into a blood vessel. When injecting with the needle stationary, the needle should be disconnected or else the plunger of the syringe pulled back in order to observe whether blood will flow.

The solutions used by the writer are those advocated by Victor Pauchet.

The formulas are as follows:

- (1) 25 drops of 1/1000 adrenalin solution to 200 mls of 1/2 per cent novocain solution.
- (2) 25 drops of adrenalin to 100 mls of 1. per cent novocain.
- (3) 25 drops of adrenalin to 50 mls of 2 per cent novocain.
- (4) 25 drops of adrenalin solution to 25 mls of 4 per cent novocain.

The writer often uses the combined novocain and synthetic adrenalin tablets which, in his hands, are just as effective and more convenient.

There is no hesitancy in using up to 200 or 250 CC. of the 1/2-strength solution where called for. However, it must be noted that the more concentrated the solution the more care must be exercised in its use. The solvent for both is normal salt solution, in order to make the anaesthetic solution as nearly isotonic with the body fluids as possible.

Care must be exercised in the use of the proper amount of adrenalin as the tissues may sometimes be rendered ischemic to the

point of tissue death, with a resulting slough. The writer has had one such result in an elderly man with low tissue resistance. Adrenalin should be used in the very young, the old, the arterio-sclerotic and the diabetic, in reduced quantities. Its use in the pedicle of skin flaps is likely to cause the death of the flap. Too much adrenalin causes a dilation of the vessels following its constricting effect. When direct infiltration or circuminjection is used and in rectal work, special care must be exercised in careful haemostasis and obliteration of dead spaces. This is especially true in thick layers of fat and in the scrotum. No adrenalin should be used in venous anaesthesia. Also according to the work of Goetsch it is not advisable to use adrenalin in cases suffering from thyroid toxæmia.

Local anaesthesia may be produced through various procedures in injecting.

1. Nerve-block—this includes (a) spinal, (b) para-vertebral, (c) peri and endo neural, sacral and para-sacral injections, and (d) circuminjection.

2. Infiltration of the tissues in the operative field.

3. Venous.

4. Arterial (little used).

The writer in his work has had recourse to, peri and endo neural, circuminjection, infiltration and venous anaesthesia, almost exclusively, and it is to these methods that the remarks of this paper refer.

Venous anaesthesia may be used to block all the nerves in a cross section of a limb, and is applicable below the middle of the thigh and arm. To produce it, a section of the limb is rendered bloodless between two tourniquets, a vein dissected out and from 50 CC. to 150 CC. of 1/2% novocain solution injected into the vein under pressure. This blocks all the nerves passing through this segment of the limb in about 15 minutes.

To use local anaesthesia successfully, the operator must be familiar with the anatomy of the nerves in the region operated upon. Analgesia, not necessarily anaesthesia, must be accomplished. Pain must be avoided, yet the sensation of pulling or touch often cannot be avoided. But these sensations are seldom disagreeable.

The physic condition of the patient here plays considerable part and it is the custom of the writer in all operations of importance, under local, to administer to adults: Morphine gr. 1/4, Scopolamine gr. 1/150, one-half to one hour before operation. This

quiets their fears and many have been seen to sleep during the greater part of the operation. The operator must be careful to impart confidence to the patient throughout the operation, and must use a gentle and unhurried technic. Patients are allowed to smoke during the operation when circumstances permit. For all patients, someone sits by their head to engage them in conversation. This distraction is particularly necessary in dealing with children, for whom it is better to have some member of the family whenever possible. Comfort is of prime importance, therefore, the patient should be placed in as comfortable a position as possible, and a comfortable mattress provided to fit the operating table. Water may be given by mouth unless contraindicated.

Many tissues are practically insensative, but these are not supplied by the spinal nerves. The brain, lung and intestine are insensative, and also there is very limited sensation, if any, in the dura above the base of the skull, in the thyroid, liver, spleen, kidney cartilage and tendon. Fascia, certain areas in the muscles, parietal pleura, parietal peritoneum, capsular tissue, periosteum, bone marrow, perichondrium, tendon sheaths, synovial membranes, skin, subcutaneous tissue and mesentary, are sensitive to pain in varying degrees.

The writer has now been using local anaesthesia for some six years, during which time, he has gradually widened its scope *with increasing experience*, until now practically fifty per cent of his work is being done under local. He does not hesitate to use a general anaesthetic of short duration, gas or ethyl chloride, at certain stages of certain operations, particularly those in the abdomen necessitating interference with the mesentery, and in exploratory laporatomy where extensive exploration is called for. The following is a partial list of operations done in this period:

1. Hernitomies (practically all).
2. Fistula in ano (practically all).
3. Perineorrhaphy ((complete and incomplete tears).
4. Hemorrhoids (practically all).
5. Cystotomy (practically all).
6. Circumcision (practically all, even children).
7. Exploratory laporatomy.
8. Appendectomy.
9. Intestinal resection.
10. Colostomy.
11. Ventral hernia.
12. Thoroctomy with and without rib resection.

13. Thyroidectomy.
14. Excision of inguinal and cervical glands.
15. Removal of osteomata.
16. Decompression.
17. Amputation below middle one-third arm.
18. Amputation below middle one-third thigh.
19. Teno-pasty.
20. Excision of carbuncles.
21. Excision of carbuncles, lipomata, keloids, sebaceous cysts, moles, benign tumors of the breast, etc.
22. Introduction of steinman pins through femur and os calcis.

This list is written to show the wide applicability of the method. It is not argued that it should be used in all cases under all circumstances, but local anaesthesia has a very definite place in major, as well as in minor surgery, and the surgeon who ignores that fact is not doing the best for his patient in all instances. Several cases are recalled, in which anything but a local anaesthetic would have been extremely dangerous, yet those patients hardly showed the effects of the operation under local, and what is best for a patient in extremis should also be safest under usual operative conditions.

There are arguments both for and against local anaesthesia in general surgery. This much can certainly be said in its behalf. Its mortality list is low since cocain has been replaced by novocain. The post-operative dangers, pulmonary complication, organic degeneration and vomiting practically all are eliminated, there is practically no shock, danger of asphyxia is absent, there is no danger to the patient in having a tedious operation. Patients so operated are much less trouble to nurse, needing no special post-operative care such as is true of general anaesthesia cases for the first few hours after operation. On the other hand, the surgeon must at the same time be anaesthetist and surgeon, must be specially trained in his work, must be much more gentle and vary his technic to suit the occasion, and the co-operation of a conscious patient is often of material aid in the actual operative procedures. Occasionally, partial anaesthesia is induced necessitating a short inhalation of ethyl chloride or other general anaesthetic and it often takes a little more time which, for the nervous type of operator, is, in many instances quite distracting.

In any discussion of local anaesthesia, the remarks must necessarily be confined to

the type of those in this paper, unless describing the procedure in a given operation. To attempt to describe the procedure in all operations would require too much space for one paper. The writer refers you to the various volumes on this subject, several having been published since 1912, and the many articles which are continually appearing in the medical periodicals of England, France, Germany and America. To those interested he would advise that they read, first of all, the book written by Braun, which is now translated into the English language.

Discussion: P. P. NESBIT, M. D., Muskogee, Okla.

First of all I want to express my appreciation of this paper, and the excellent work Dr. Fite is doing with local anaesthesia, for I am so situated that I know something about what he is doing along this line.

However, we cannot all see things in just the same way, so there are some things in his paper that I wish to call attention to. In addition to the dangers mentioned of sloughing and of hemorrhage following infiltration anaesthesia, and which are very real dangers, there is sometimes the difficulty of correct approximation of the tissues in closing, due to the hyperaemia of the tissues, or to incomplete relaxation due to incomplete anesthesia or to nervousness of the patient.

The writer states that he is now doing approximately 50% of his operative work with local anesthesia. This is a rather indefinite statement. If he is including all his minor operations, which we all do principally with local anesthesia, it will depend a great deal upon the amount of minor as compared with the amount of major surgery he is doing. However, if he means that he is doing anywhere near half his major operations with local, I believe that he is dangerously near having local anesthesia for a hobby. Mind you, I do not say that it is not possible to do half, or in fact nearly all, major operations with local, but the fact that it is possible does not by any means imply that this is the best method.

He also states that he does not hesitate to give a general anesthetic if it becomes necessary during the operation. In my opinion it is not advisable, unless there is some real contraindication to a general anesthetic, to start an operation with local unless we are reasonably sure that we can do all that is necessary without resorting to

general anesthesia. For if you give the general anesthetic you have gained nothing by using the local, but have prolonged the operation, while if you do not give the general you either cause your patient unnecessary pain or do incomplete work, or probably both.

As to the use of local anesthesia for operations on children, so much depends on the disposition of the child and of the parent who accompanies them, and the control the parent has over the child, that it is difficult to estimate what percentage of them may be satisfactorily operated with local.

As to the classes of operations Dr. Fite mentions, in my opinion, local anesthesia is not the best in "practically all" hernia operations. In my experience many hernia present conditions that, in my opinion, are handled better under general anesthesia. Fistula in ano with extensive ramifying tracts; extensive perineal lacerations; and severe internal hemorrhoids are better operated with general anesthesia. Post-operative bleeding is especially liable to occur if infiltration anesthesia is used in these cases. In all intra-abdominal operations general anesthesia is to be preferred, unless contraindicated. In amputation of limbs Dr. Fite uses the venous method of local anesthesia, a method I have had no experience with so am not prepared to discuss.

INTESTINAL OBSTRUCTION.

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Intestinal obstruction is the manifestation of a great variety of pathologic process, the action of which produces a stasis of the fecal current. Speaking in general terms, the maintenance of the fecal current is dependent upon sufficient propulsive power of the intestinal musculature—peristalsis—and upon the integrity of the intestinal lumen. Suspension of the former produces what is termed—paralytic obstruction; occlusion of the latter, mechanical obstruction.

The paralytic form may be: (1) reflex, secondary to some extraneous lesion, such as renal or biliary calculus, torsion of an ovarian cyst, early acute pancreatitis, or injury to the testicle; (2) due to some definite lesion of the intestinal musculature, as in peritonitis, rupture, thrombosis

or embolism of the mesenteric vessels; (3) toxic, associated with uremia, pneumonia, and other forms of sepsis. On the other hand, obstruction may be due to an undue spasticity of the intestinal musculature.

Mechanical obstruction may be produced by lesions outside the intestine, as tumors, inflammatory adhesions, congenital bands, peritoneal pouches, and mesenteric slits. Or the obstructing medium may be with the intestine, as benign or malignant strictures and foreign bodies. The intestine may twist upon its own mesentery as an axis—volvulus, or one segment may be invaginated into another—intussusception.

. In treatment of intestinal obstruction, whether acute or chronic, the surgeon must always be prepared for surprises, for there is probably no other department in the whole of surgery where the diagnosis of the underlying cause is so difficult to foretell. This is easily understood when one considers the manifold possibilities for mischief within the abdomen. Apart from purely intrinsic causes, the bowel may be impeded in its functions by many conditions of the intrinsic origin.

Progress in the treatment of acute intestinal obstruction has not kept pace with the progress made in treatment of other acute abdominal conditions; that the present mortality rate is high is due to delay in resorting to operation. This is probably due to uncertainty in diagnosis; first, because of the infrequency of the condition, and second, because the text-book descriptions of acute obstruction invariably picture a well advanced case and not the symptoms at onset.

In 75 per cent of cases of acute intestinal obstruction, the only symptoms present in the early stages are peristaltic pain, vomiting, and constipation. These three symptoms should at once arouse a suspicion of obstruction, and every effort made to decide the point without delay. The personal history may reveal previous peritonitis, poisoning by lead, or the tyrotoxicosis of stale milk, or ice cream.

A careful examination of the usual hernial sites is then made to exclude strangulated hernia. But most important of all is to determine whether or not constipation is absolute by giving repeated enemata, two or even three. Morphine should be withheld until a diagnosis has been reached and the condition and treatment explained to the patient.

Stercoraceous vomiting abdominal dis-

tension rapid, feeble pulse and symptoms of collapse belong to the late and not the early stage of intestinal obstruction, and a diagnosis to be of service to the patient must be made before the onset of these symptoms. The three symptoms, peristaltic pain, vomiting and absolute constipation, verified by the enema test, justify the diagnosis of obstruction.

The reflex type usually yields with the relief of the underlying cause. In those exceptional cases in which treatment is indicated, morphine and atropin are the drugs of greatest service. Hot applications in the form of poultices or turpentine stupes or, if these fail, cold by means of the Leiter coil, often prove beneficial. High glycerin oil, or turpentine enemata and cathartics are useful in stimulating peristalsis.

MECHANICAL OBSTRUCTIONS Blocking of the fecal current causes not only failure of elimination, but also rapidly increased production and absorption of highly toxic substances, which soon render their host a poor operative risk. Furthermore, as the result of delay in relieving the obstruction, the vascular supply of the intestine may be so impaired as to necessitate procedures which, even under the most favorable circumstances, are associated with a high mortality. Therefore, the keynote of successful treatment lies in early, accurate diagnosis, with immediate operation in the majority of cases. When the symptoms point toward obstruction but are insufficiently developed to permit a definite diagnosis, I consider it warrantable to make an exploratory incision, which of itself is practically devoid of danger and may be a life-saving measure.

The definite indications presented for surgical treatment are early removal of the obstructing medium, which in delayed cases may include excision of a gangrenous loop, and evacuation of the poisonous intestinal contents. With the exception of fecal impaction, mechanical obstruction is relieved only by surgical means. Internal medication is then used to hasten the elimination of toxic products and to maintain the function of vital organs, impaired through the action of these toxins. The use of morphine and its derivatives is to be strongly condemned. Cathartics are likewise contraindicated.

OPERATION: In the presence of vomiting, lavage is employed immediately, plenty of fluids should be given before and after the operation by proctoclysis or by hypo-

dramoclysis or by both prior to the operation. The incision is made over the site of obstruction when this can be definitely determined; otherwise the median hypogastric incision offers the best avenue for exploration. The fingers or if necessary the whole hand, should be introduced and a gentle, rapid and systematic search made to determine the location and cause of obstruction. Following up a distended or collapsed coil will often lead quickly to the seat of trouble. The ileocecal and umbilical regions, hernical, orifices, and pelvis are the most common sites of obstruction. If intra-abdominal search is futile, time will be saved by allowing the intestines to escape through the incision, which greatly facilitates further manipulations. During this evisceration, the intestines are carefully protected by hot, moist towels. Subsequent procedures depend upon the nature of the obstruction.

Tumors of adjacent organs require excision. Inflammation adhesions may be broken up with the fingers or by careful sponging, or may be so dense as to require cutting with knife or scissors. To avoid reformation the denuded areas must be carefully covered with peritoneum. Long bands are divided between ligatures placed close to the intestine, the intervening portion being excised. The anastomosis of segments proximal and distal to the seat of obstruction is required in those cases presenting dense, multiple adhesions, the separation of which would be impossible.

A Meckels' diverticulum demands excision. After freeing the blind extremity, the proximal end is divided a short distance from the intestine and the stump inverted by a continuous through and through linen suture. As an additional safeguard, I use a sero-musculature stitch of catgut. This inversion must not narrow the lumen of the intestine.

Obstruction in a hernia is dealt with according to the technic appropriate to the hernial orifice affected.

INTERNAL HERNIA: If difficulty is encountered in releasing the intestine the neck of the sac must be enlarged by careful stretching or incision at the point free from blood-vessels. Following reduction the neck of the sac is narrowed or obliterated by sutures.

MESENTRIC SLITS: Not infrequently the opening must be enlarged by stretching or incision at an avascular area before reduction can be accomplished. After releasing

the intestine, the rent is closed with a continuous catgut suture.

INTUSSUSCEPTION: Reduction of the intussusception by hydrostatic pressure is to be condemned, because of its frequent failure and danger. The procedure may be used as a measure preliminary to operation in a very early case in which the invagination extends well along the transverse or the descending colon, thus producing a partial reduction before the abdomen is opened, and diminishing intra-abdominal manipulation with its attending shock. Reduction is accomplished not by pulling on the invaginated bowel, but by progressive upward compression of the intestine, distal to the tip of the invagination. Anomalies predisposing to recurrence must be corrected after releasing the invagination; a polypus, tumor, or diverticulum is excised; a long cecum or freely movable ascending colon is fixed to the parietal peritoneum. Intussusception of the small intestine may necessitate shortening of the mesentery by plication, which must be done cautiously to avoid injuring the blood-vessels. Should the intussusception be irreducible, the invaginated portion may be removed through a longitudinal incision in the intussusciens or in chronic cases in which gangrene is unlikely, the whole area may be excluded by a lateral anastomosis. On account of its high mortality, complete excision with end-to-end or lateral anastomosis is advisable only in exceptional cases.

VOLVULUS: The sigmoid flexure is the most common site of torsion, although any freely movable portion of the intestine may be affected. The condition is usually secondary to some abnormality such as an unduly long mesogimoid, adhesion, or tumor, which must be remedied by appropriate measures to avoid recurrence. A greatly distended loop requires evacuation by incision before uncoiling can be accomplished. The obstruction may be permanently overcome simply by untwisting the bowel; in other cases, however, the twist reforms immediately after reduction. It may be possible by fixation of the bowel to the abdominal wall or by shortening the mesentery to prevent recurrence; if such procedures are futile, excision is necessary.

In any of these forms of obstruction the vitality of intestine may be so impaired as the result of pressure or direct injury to the mesenteric vessels that resection of the gangrenous loop with the end-to-end or lateral anastomosis is required. Such a re-

section should include normal intestine well beyond the area of gangrene.

STRICTURES: Excision of the stenosed segment with end-to-end anastomosis is the ideal procedure in both benign and malignant strictures of the small intestine. In the absence of marked distension of the proximal segment, however, excision is dangerous, and must be supplanted by lateral anastomosis with subsequent excision at a second operation in case of malignancy.

Tuberculosis may produce single or multiple strictures in the small intestine, or may be localized chiefly to the ileocecal region, producing a tumor which is often difficult to distinguish from carcinoma. If the stricture is single, or if multiple strictures are closely approximated, resection of the whole stricture-bearing segment is advisable; if a considerable length of normal intestine separates the strictures each one should be treated separately. When the process is localized to the ileocecal region, the diseased area should be excised and the ileum joined to the ascending colon by a lateral anastomosis. The condition of the patient or extensive tuberculous involvement may prohibit excision, under which circumstance the obstruction is overcome by short-circuiting the fecal current, anastomosing loops proximal and distal to the site of the stenosis. Decided improvement in the patient's condition, which frequently follows this procedure, may permit a subsequent resection of the involved area.

Stenosis of the large intestine is due to carcinoma in the great majority of cases. If operable, an excision is performed, including intestine well beyond the growth, especially on its proximal side. Excision of the cecum is followed by an ileocolostomy excision of other portions of the colon may be necessary to permit the easy apposition of the two ends. Should the growth be operable an ileocolostomy or ileosigmoidostomy is required to carry the fecal current around the stenosed segment; inoperable obstruction of the rectum is relieved only by the formation of an artificial anus. Under no circumstances should excision with immediate anastomosis be undertaken when the obstruction is acute, since the intestine above has undergone such alterations as to make the procedure hazardous. The object of the primary operation is limited to the re-establishment of drainage, which is accomplished by an ileocolostomy or colostomy; after three or four weeks have elapsed, ex-

cision with anastomosis may be performed with comparative safety.

Chronic diverticulitis may lead to the formation of a mass indistinguishable microscopically from a malignant growth. The same general rules detailed for the treatment of operable carcinoma are applicable to this condition.

FECAL IMPACTION: A collection in the lower bowel which resists enemas must be broken up with the fingers and evacuated by an oil injection. A high rectal or sigmoidal impaction which injections fail to liberate requires instrumental separation through a proctoscope, with subsequent enemas to bring away the doughy mass. The administration of olive oil in the dose of two or three ounces four times a day, or saline cathartics and careful abdominal manipulations, may produce the evacuation of a collection in the transverse colon. Purges are dangerous. When, as the result of long standing, the fecal mass is hard and inspissated, ulceration with enterospasm or even partial encapsulation may ensue, under which circumstances other than surgical measures will fail. It may be that intra-abdominal manipulation will succeed in dislodging the accumulation so that it can be passed; should this fail, enterotomy must be performed. Exceptional cases present such extensive ulceration as to demand resection.

Gall-Stones and other foreign bodies are removed through an incision in the overlying intestine; if the body can be dislodged, the incision should be made in the dilated portion above to facilitate closure of the intestinal opening.

THROMBOSIS AND EMBOLISM OF MESENTERIC VESSELS: It is often impossible to locate definitely the line of demarcation between the affected and unaffected loops; or the process may be progressive, hence resection with anastomosis is unsafe. All that can be done at the primary operation is wide excision of the gangrenous, segment, with the formation of fecal fistula, both ends being sutured to the abdominal wound and drained. To anticipate further extension, the suspected area should be walled off with gauze. After a week or ten days has elapsed the fistula is closed at a second operation.

When the obstruction has existed for any length of time, the intestine above becomes loaded with highly toxic contents, which are evacuated by multiple incisions, or preferably, by the method advised by

Moynihan, which consists in carrying off the contents through a large glass tube inserted into the intestine from below upward. The glass tube is fitted with a long rubber tube which drains into a receptacle. As each segment is evacuated by a "milking process" it is threaded on the tube, the procedure being repeated until the canal is emptied. Following the removal of the tube, the incision in the intestine is closed transversely. When properly performed, no soiling occurs and drainage is unnecessary. It may be possible to avoid opening a distended sigmoid by passing a rectal tube. Following any operation on the large intestine, particularly the descending colon or sigmoid, dilation of the anal sphincter and insertion of a rectal tube are advisable to facilitate the passage of gas and feces.

The formation of a fecal fistula above the site of constriction is permissible only when the desperate condition of the patient prohibits a more extensive procedure. Should the symptoms be indicative of strangulation, it would be folly to rest content with a fistula; while the obstruction is relieved, the gangrenous intestine quickly leads to peritonitis and death, a sequence which, obviously the fistula cannot influence. Through a small incision made under local anesthesia, low down in the inguinal region, a distended loop is picked up and carefully excluded from the abdominal cavity by suturing it to the parietal peritoneum. The intestine is then opened and drained by means of a glass or rubber tube, held in place by a purse-string suture. Later, when the patient's condition permits a second operation is usually necessary to remove the cause of obstruction and to close the enterostomy opening.

CONCLUSION.

Early diagnosis is the most important factor in the whole category. It is better that the operation should be done early than well. Better a poor operation done on a patient in good condition, than a good operation done on a patient in poor condition.

HEART CLINICS FOR SCHOOL CHILDREN.

The studies made by Harry B. Schmidt, Detroit, (Journal A. M. A., Sept. 16, 1922), of the heart clinics for school children in Detroit have demonstrated that progressive cardiac failure is usually due to an infectious process in the heart itself. This idea has been sufficient to indicate the importance of eradicating any foci of infection which may be present elsewhere in the body. Such a procedure may, in the future, prove to be the most efficacious measure we possess for preventing cardiac failure in school children.

SPLENIC ANEMIA (Banti's Disease), AND ALLIED DYSCRASIAS. SPLEN- ECTOMY. CASE REPORTS.

LeROY LONG, M. D., F. A. C. S.,
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There are three conditions accompanied by splenomegally in which the surgeon is especially interested. They are splenic anemia, hemolytic jaundice and Gaucher's disease. Other conditions, such as pernicious anemia and von Jaksch's anemia, may be regarded as occupying an unstable position in the surgical mind at this time.

Nobody knows the cause of splenic anemia. With our present knowledge, clinicians use the name for convenience, but regard it as a syndrome rather than an entity. Many investigators are of the opinion that the cause of the syndrome is a toxin, and this appears to be the most tenable theory. The origin of the toxic agent is not clear. Three hypotheses have been set up:

1. That the toxic agent originates outside the splenic area, and when it reaches the spleen initiates the pathology.
2. That it is a splenotoxin *per se*.
3. That it is a splenotoxin, the production of which is brought about through the irritating effect of an outside toxin upon the splenic tissue.

One thing, however, seems clear, and that is that the spleen is at least the necessary medium through which the propagation of the syndrome takes place. The fact that in most cases the removal of the spleen is followed by cure is proof of this.

Whatever the agent, it initiates a hyperplasia, and as a result of this increased development of splenic tissues there is a very interesting phenomenon.

Through the relationship between the terminal arteries and the Malpighian bodies, the latter receive nutrition. With the normal pabulum thus coming to them, these bodies carry out their function of manufacturing lymphoid cells, this function, in the normal state, having its metes and bounds. But in the presence of hyperactivity associated with hyperplasia there is an over-abundant production of lymphocytes, which break away from their moorings and finally reach the splenic vein—hence the frequency of a high percentage of this kind of cell in the leukopenia usually associated with splenic anemia.

Another interesting matter is the part played by the spleen in the production of anemia, not only in splenic anemia, but in hemolytic jaundice, and possibly in pernicious anemia, as well. It seems pretty clear that the red cells are destroyed in the spleen. They are engulfed by the cells of the spleen which are, with the exception of the purely supporting cells, "modified endothelial cells" (Moynihan), and have phagocytic powers and proclivities. Considered from such a viewpoint, the name of splenic anemia is not altogether inapt.

Now, in splenic anemia there is often—in fact, usually, bile in the urine, but jaundice is rare. Still, it is a step in the direction of jaundice, for both conditions—bile pigment in the urine and demonstrable jaundice—mean that an excess of coloring matter from the disintegration of red cells in the spleen has reached the liver, and the liver being unable to deal with it, the excess overflows into the blood stream. Essentially, this process is the same as that found in hemolytic jaundice, the difference being that in the latter the liver receives such an enormous amount of hemoglobin through the portal vein into which all the blood from the spleen flows, that it is totally inadequate for the task of handling it, and not only pigmented urine, but also jaundice results. When it is remembered that after splenectomy in the normal animal the amount of bile pigment formed is at first reduced approximately one-half, reflection upon the effect of the hyperactivity of the splenic phagocytes becomes more interesting.

Splenic anemia may occur in the young, but is much more frequent in the adult. Pretty constant features are splenomegaly, distinct anemia—sometimes profound—and a marked leukopenia. The duration is usually a few years—occasionally many years. The following case is illustrative of a type in which the anemia is marked, but not profound, in which the duration is relatively short, and in which there was the unusual phenomenon of pain.

Case No. 1.

Hospital No. 11445.

Mrs. Pearl G., white, 35, entered the hospital September 27th, 1920, the chief complaints being weakness, loss of weight, left-sided abdominal pain and a large mass in the upper abdomen.

The patient emphasized the symptom of pain, which she described as being constant in the lower abdomen, more on the left side, and frequently radiating downwards

and to the right. The taking of food made the pain worse, and caused it to be "cramping and pulling" in character. When the stomach was empty there were frequently gnawing and aching sensations about the abdomen.

According to the history, the patient had "cramping spells" two years before she came to the hospital. At first they would last three or four weeks, usually beginning in the left abdomen. There was no fever with the attacks. Generally after three or four weeks of pain there would be an interval of rest for three or four weeks. At first, the pain was not enhanced by eating, but she thinks the attacks were worse during the menstrual period.

Six months after the beginning of pain the patient noticed a small lump in the upper part of the left lower abdomen, and she had a heavy feeling in the abdomen. The "cramping spells" were closer together. The "lump" slowly grew. At the end of a year from the beginning of the "cramping spells" she described it as being about the size of an egg. About that time she observed that certain kinds of food, especially meat, gave her great distress—such distress that "nothing relieved it." Starchy food, such as potatoes, did not cause much trouble.

During the next six months there was a rapid increase in the size of the tumor, so that at one year after it was discovered there was a large mass in the abdomen, which she says was practically the same size as when she entered the hospital six months later. The pains then were much worse and constant, she describing them as being "pulling, cramping and drawing" in character. The taking of food gave her so much trouble that she ate very little.

A little over three months before the patient entered the hospital there was a cessation of menstruation. At that time she had pains in the back and legs. The appetite became poor. She lost weight and became much thinner and weaker, and she had much headache.

The past history is not of any considerable importance. She had a discharging ear four years before entrance, but it did not last long. She was confined normally eight years before. At that time there was a laceration of the perineum, which was not repaired. She had one abortion at four and one-half months about four years before entrance. There was no venereal history.

The family history was not significant.

The general appearance was that of a fairly well nourished, sick looking woman.

The skin was described as soft, loose and muddy in color. The lips were dry and smooth. The teeth were clean and in good condition. The tonsils were slightly enlarged and inflamed. Examination of the head, neck, chest and chest organs was negative. The pulse rate was 80, blood pressure Systolic 90, Diastolic 60.

There was a large mass in the abdomen extending from about an inch below the ensiform to four inches above the pubis. Laterally, the mass extended from one mid-axillary line to the other. The mass was hard, smooth, firm, painless and mobile from side to side. It seemed to be attached in the upper left abdominal region. It was a little more prominent to the right of the midline. There was an indistinct notch on what appeared to be the lower border. The mass moved up and down when the patient coughed. Over it there was no muscular rigidity or hyperesthesia.

The liver was not palpable, nor was there a palpable body in the normal location of the spleen.

One of the senior house officers made a vaginal examination and reported a negative finding except a lacerated cervix. A senior medical student on service at the time discovered a second mass in the lower abdomen, thought he could make out a uterine souffle, and gave it as his opinion that the woman was pregnant.

The patient was seen by the Obstetrical Division, which left the opinion that the woman was pregnant about 3½ months.

No malarial parasites were found. The Wassermann was negative. The red blood count was 3,570,000, white count 2,800, neutrophils 63, small lymphs 30. Another count showed 3,800,000 reds, 45 neutrophils, and 15 each of small and large lymphocytes. The white count was made a number of times, and ranged from 2,800 to 3,450. The hemoglobin percentage averaged 40. There was anisocytosis, poikilocytosis and polychromatophilia. The Medical Service in summing up the blood findings stated that the picture was that of a fairly severe secondary anemia.

The patient was investigated in the Medical Service, the final opinion being that she had splenic anemia. She was seen by a surgical consultant who concurred in the diagnosis, and splenectomy was advised, attention being called to the probable difficulty of the operation in connection with this type of disease.

In this case, the tumor occupied such a large area in the upper abdomen, and was so uniformly in the middle of the abdomen, there was at first great doubt as to the exact character of it. After a chemical meal, an x-ray examination was made, the Radiological Department reporting that the stomach was high, displaced to the left, irregular in outline, there being an inability to determine its shape. From the x-ray examination it was not possible to tell whether the x-ray picture was due to an anomaly of the stomach or to pressure from the outside.

A splenectomy was done on November 3rd, 1920. The spleen had a very long pedicle and was displaced markedly to the right. There was no great difficulty in connection with the operation, and the patient recovered without any particular trouble except some superficial breaking down of the abdominal wound.

The specimen weighed 1050 grams, and measured 15x18x7 cm. It was purple in color, smooth, firm and had two notches on the anterior border. The Pathological Department reported that there was a chronic fibrosis. The capsule was thickened, and there was hyperplasia of the reticular structure.

The day before operation there was a red count of only 2,240,000, and a white count of 5,500. This was the lowest red count and the highest white count that had been recorded. Twenty-one days after the operation—that is, on November 24th, 1920—there was a red count of 4,120,000 and a white count of 6,700.

The patient left the hospital in fair condition on December 3rd, 1920.

Through a friend of the patient it is learned that the pregnancy continued to term when she was delivered of a healthy baby in a normal manner. She recovered normally from the pregnancy and the last heard of her, about two months after the confinement, she was in good health.

Points of interest in this case are:

1. The rather unusual history of severe pain and cramping. This can probably be explained in connection with the great mobility of the tumor, the pain no doubt being due to twisting of the pedicle. The direct pressure of the tumor upon the stomach accounts for the additional distress after taking food.

2. It will be observed that there was a very low white count. In fact, there was an extreme leukopenia until the day before

operation, when the count showed a marked, but not extreme leukopenia.

3. Another point of interest is the low neutrophile count, which averaged around 45.

4. The presence of anisocytosis, poikilocytosis and polychromatophilia.

5. The rapid return of the blood picture to approximately normal within three weeks after the splenectomy.

The next case I shall report is illustrative of the rather unusual type that has a developmental period of many years. In such a case one is inclined to suspect that the syndrome described by Banti was preceded by a long period of splenic dysfunction of an unknown character. This case, too, will serve to show the efficacy of blood transfusion followed by splenectomy in a condition at first apparently hopeless.

Case No. 2.

Hospital No. 12220.

Mrs. Chas. W., white, housewife, American, 41, mother of nine children, the youngest being eight months of age, entered the hospital January 11th, 1921, the chief complaints being a mass in the upper left abdomen, great weakness, marked loss of weight, dyspnea, puffiness about the eyes and swelling of the feet.

The patient dated her illness from the summer of 1920, when she had some trouble on account of infected teeth and tonsils. Her health rapidly declined, and her weight dropped from 140 to around 100 lbs. She became weaker and weaker, and finally on November 25th, 1920, collapsed. She was unable to talk and was not able to help herself. It was very hard for her to breathe, and she was extremely nervous. There was only slight pain, and it was located in the left side of the upper abdomen. Following the collapse she had swelling of the feet, more pronounced dyspnea and puffing about the eyes.

The patient had not been entirely well for longer than twenty years. In 1897, during a pregnancy, she noticed a lump in the upper left abdomen. After confinement it disappeared, but was present again during the next pregnancy. This history was repeated until the last confinement in April, 1920. After that confinement the tumor did not disappear, but became larger.

There is nothing, aside from what has been said, of unusual interest in the past history.

The patient menstruated in July, 1920,

after the baby was born in previous April, but had not menstruated since.

At the time she entered hospital, the record shows that she was emaciated, with sallow, yellowish, waxy skin and pale mucous membranes. There was a haemic murmur in precordium. There was a mass in the left hypochondriac and lumbar regions, hard, smooth, painless, with a notch on the anterior superior border. The liver was tender and palpable. There was no tremor, no ataxia. The pupils reacted to light and the reflexes were normal. The mind was clear and alert.

Analysis of the stomach contents after Ewald showed marked achlohydria.

The Wassermann was negative.

The urine showed the presence of bile.

Upon entrance to the hospital the pulse was 100, temperature 99.2. In the afternoon of the same day the temperature was 99.8, and the blood pressure Systolic 114. Diastolic 64.

The R. B. C. was 1,500,000, W. B. C. 2,500, neutrophiles 35, small lymph 53, hem. 40 (Talquist). There was anisocytosis, poikilocytosis and polychromatophilia, and nucleated reds. The blood count was checked the next day, the report being:

R. B. C. 1,240,000, hem. 19 (Dare).

Two days later the report was R. B. C. 1,810,000.

The W. B. C. was made a number of times during the next two weeks, the count being from 2,000 to 2,500, and there was always a marked reduction in number of neutrophiles—on one occasion as low as 12, on another 15, but usually around 30 to 35. There was always a high small lymph count, from 53 to 69.

There was increased fragility of red cells.

The clotting time was 5½ minutes.

The proteopexic test was positive, the figures for white cells being:

Before meal, 2,250.
20 minutes, 1,300.
40 minutes, 2,000.
60 minutes, 1,400.
80 minutes, 1,400.

There was a marked shortening of coagulation time, the figures being:

5¼—1¾—1¼—1¼—2.

The patient was entered in the Surgical Service, but, after a consultation, was transferred to the Medical Service, which rendered the opinion that she had pernicious anemia for the following reasons:

Weakness with but little pain, palor, low R. B. C., high lymph count, great loss of weight, profound anemia, low hemoglobin, enlarged liver, presence of tonsillar infection and achlohydria, and advised rest, extraction of teeth, full diet, massage of tonsils and transfusion.

On January 22nd, 1921, the first transfusion was done, 450 c. c. of citrated blood being employed. At that time the R. B. C. was 1,240,000. Two days later it was 1,810,000 and four days after transfusion it was 2,140,000. The patient felt better and was holding her own. After further investigation, it was decided, on account of the long history of enlarged spleen, the marked anemia, the very marked leupkopenia, the enlarged liver, that the patient had a splenic anemia, or Banti's disease, and she was sent back to surgery.

On February 15th there was a red count of 2,550,000. On February 18th, 700 c. c. of citrated blood was transfused into the veins. Two days later there was a red count of 3,080,000 and a white count of 2,500. She was so much improved that splenectomy was decided upon, and the operation was done February 22nd, 1921.

The operation was difficult, the pedicle being very short, and the spleen in close relation with the stomach and tail of the pancreas. The spleen was greatly enlarged, with enormously enlarged tortuous vessels. There was not much depression from the operation, she leaving the operating room with a pulse of 112 of "fair" quality. At 1:45 p. m. on the day of the operation the pulse rate was 76.

A blood count made on February 24th, two days after the operation, is extremely interesting. The red count had dropped to 2,500,000, but there was a white count of 12,900. It will be remembered that before the operation there was an extreme leukopenia. The neutrophile percentage was 74, while before the operation it had been as low as 12, and never above 35. The small lymph percentage was 16, while before the operation it was from 53 to 69. The patient slowly improved and was discharged a month after the operation. The last blood count of which I can find a record was on March 11th, when the R. B. C. had crept up to 2,960,000 and the white count on that date was 5,600.

On February 22nd, 1922, I had a voluntary communication from the patient, from which the following is an extract:

"Today is the 22nd, and one year since I was operated on, and as I cannot get down there I just thought that I would write you

to let you know that I am in perfect health and weigh 150 lbs. My side has never given me the least bit of trouble. I am up and down the steps, never thinking of it at all. * * * I do not feel tired at all like I used to. I do all my work, and walk from one to three miles without getting out of breath."

I submit as points of interest in the case of this patient:

1. The extreme leukopenia.
2. The remarkably low neutrophile percentage.
3. The high percentage of lymphocytes.
4. The positive proteopexic test which, according to Widal, showed interference with the protein fixing function of the liver.
5. The rapid return of the relative number of different types of white cells quickly after the operation.
6. The long existence of what was apparently a prodromal splenomegaly covering practically the entire child bearing period without interference with the procreative function.
7. The very satisfactory result from a radical operation in the case of a patient almost *in extremis* when she entered the hospital.
8. The remarkable efficacy of transfusion of blood in the preparation of patients of this character for operation.

I regret exceedingly that I am not able to furnish a pathological report in this case, due to the inexcusable disappearance of the specimen before it was examined.

The subject of hemolytic jaundice has been referred to, and it may not be out of place to now briefly consider some of its salient features.

Clinically, there are two types—the acquired, or Hayem-Widal type, and the familial, or Chauffard-Minkowski type. The evidences of the former may appear at any age, but most frequently in childhood. In the latter the symptoms are present at birth.

Formerly, there was a rather fixed belief that these two types were distinct entities. Even after the remarkable efficacy of splenectomy had been demonstrated in the treatment of the so-called acquired type, there was no manifest disposition to apply the same means for the relief of the familial type.

At this time, due to the remarkably important investigations by Pearce and his associates, as well as many other workers in the field of research, it is pretty definite-

ly decided that there is no fundamental difference in the nature of the two types. As pointed out by Pearce, Krumbhaar and Frazier, "It is obvious that the familial type must at one time or another have originally been acquired," and I have wondered if its relatively benign course might not be explained by cell training and adaptation that begins co-incident with the beginning of embryonic life.

The cardinal symptoms are exactly the same in the two types—splenomegaly, non-obstructive jaundice, marked anemia, frequently paroxysmal, and, usually, fragility of the red cells. In both types, just as in Banti's syndrome, all agree that the dysfunction of the spleen is responsible for the continuation of the trouble, the red corpuscles perishing in that organ on account of the abnormal activity of its phagocytic cells. Other things being equal, then, the reasonable corollary from such a distinctly proved proposition would be the removal of the spleen regardless of the time at which the symptoms appeared.

Sometimes it is extremely difficult to make a distinction between the two types. I believe that the following case is an example:

Case No. 3.
Hospital No. 12221.

Velma J., age 8, entered hospital January 11th, 1921, complaining of jaundice, fever, weakness, and a mass in left upper abdomen.

According to the history, jaundice was first noticed at the age of three weeks, since which time it had been present, but for most of the time not marked. Usually once or twice a year, most often during the winter, she would have outbreaks, initiated in most instances in connection with a coryza. During these paroxysms she would have fever, and jaundice would be marked. She seemed tired and sleepy during the attacks. There was no itching of the skin. It was during one of these attacks that the patient entered hospital.

The mass in the left side had been noticed early in life, but it was impossible to secure a definite history as to the time of its appearance. When she was examined it extended downwards to the navel line, and to the right a little short of the midline. It was identified as being the spleen. It was smooth, rather firm, painless, and not very mobile.

The child was frail and much underweight. She had a little fever, seemed to be tired and rather listless, but did not ap-

pear to be profoundly ill. The skin and sclera were distinctly jaundiced.

The laboratory report showed R. B. C. 2,580,000, W. B. C. 6,300, neutrophils 67, hemoglobin 60, anisocytosis, polychromatophilia, normoblasts, with fragility of R. B. C. at .375. The urine showed bile salts and pigment in large amounts. The proteo-penic test was negative.

After due consideration, a diagnosis of hemolytic jaundice, probably of the familial type, was made, and a splenectomy was advised as soon as the patient had recovered from the exacerbation of her trouble, as the operation should never be done during a paroxysm. The Medical Division did not favor splenectomy on the ground that it was not applicable to the familial type. A week later the child was discharged "improved," as the paroxysm had subsided, and she went away from the hospital with the minds of the parents in a state of indecision. I have seen her casually once since then—the same frail, fragile little creature, woefully handicapped in the race of life and unconsciously facing a disheartening and forbidding future. When it has been so clearly demonstrated that there is "No operation in surgery giving such swift and striking results" (Moynihan), I keenly regret to see such a sufferer from hemolytic jaundice be denied the saving effects of a timely splenectomy.

To say that all patients presenting evidences of active pathology involving the spleen should be studied with the greatest care before deciding upon operation would be stating an axiomatic truth. The other day a physician sent me a patient for splenectomy with a diagnosis of Banti's disease. I will tell you about it.

Case No. 4.
Out-patient.

A boy 13½ years of age was brought for examination on account of a large mass in the abdomen, weakness, poor appetite and loss of weight. The enlargement had been noticed for only a little longer than a year, but the mother thought that the boy had not felt well for two years or longer. She remembered that long before the abdominal enlargement was noticed he would get tired quickly upon exertion, and did not manifest the activity and energy of a normal boy.

He lived in a malarial district in Southeastern Oklahoma, but had never had "chills" or other manifestations of malaria. However, on account of the enlarged spleen, the family physician had given him

quinine both intravenously and intramuscularly. This produced a dreadful urticaria and depression, but had no effect on the size of the spleen or the well-being of the patient. He was up and about, but quit school early last fall because he became tired so easily.

The boy was thin with a large abdomen. He was rather pale, but the color of the lips was fair. The superficial abdominal veins were prominent. The mass was identified as being the spleen. It extended across the mid-line, and from mid-epigastrium to below umbilicus. It was smooth, firm, painless. There was no fluid in the abdomen. The lower border of the liver could be felt on deep palpation. Liver dullness above was distinctly higher than normal.

I thought there was slight pigmentation of the face, neck and hands. The color was rather darker than from ordinary exposure to sun and weather. There was a distinct wedge-shaped, yellowish opacity of the conjunctiva on both sides of the cornea in both eyes. Up to that point, it looked like the endotheliomatous process usually called Gaucher's disease. The three conditions in which a mammoth splenomegaly is most often present are Gaucher's disease, leukemia and malaria, and I was inclined to Gaucher's disease. The boy was sent to the laboratory, and the report came back that he had 465,000 leukocytes, with myelocytes in abundance. The red count was 3,180,000, hemoglobin 54. It was then perfectly clear that he had an advanced myelogenous leukemia, and that an operation should not be undertaken.

AGAIN THE POOR BOY AND MEDICAL EDUCATION.

Long before the campaign began for the improvement of medical education, appeals were frequently being made for "the poor boy who wants to get a medical education," and, as the higher entrance standards began rapidly to be adopted by medical schools, appeals of this kind were repeatedly commented on by *The Journal*. The situation for the poor boy today is better, if anything, than it was twenty years ago. It is true that medical colleges have increased their requirements for admission from a high school education to two years of college work. The two years of college work, however, are no hindrance to the poor student; there are many colleges which provide abundant opportunities whereby students of limited means may work for all or part of their expenses. More time, indeed, is required, but these two years are well spent by the student in securing a better preparation for his medical studies. It is true, also, that the cost of conducting a medical school has been greatly increased during the last twenty years; but during the same time, the fees paid by medical students have been only moderately advanced and cover only a small portion of the cost. Even the slight-

ly increased fees, however, are more than offset by the establishment of free scholarships and generous loan funds in the better grade medical schools. The opportunities for the student of limited means to secure a medical education have in no way been diminished. As a matter of fact, the anxiety which is still being expressed for the boy who is poor in purse but not in intelligence is not warranted by the facts. Investigation discloses that many students of limited means are found in all of our high-grade medical schools, in which these students are enabled in various ways to work their way through. Meanwhile, it is the student of limited means who, as a rule, best appreciates the value of both time and money. He is not enticed by the pretentious statements of low-grade medical colleges, but usually selects the better institution. It is quite evident, therefore, that the improved standards of medical education are not hindering the student who is poor in purse from obtaining a medical education.

NEW BOOKS.

OBSTETRICS FOR NURSES.

The New (6th) Edition)

Obstetrics for Nurses, by Joseph B. DeLee, M. D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. New (6th) Edition, entirely reset. 12mo of 525 pages, with 245 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth \$3.00 net.

Newness—The new sixth edition, published July, 1922, has been thoroughly revised and reset. It includes every recent development of proved value.

Two Points of View—For many years a lecturer to nurses and a recognized authority on applied obstetrics, Dr. DeLee is admirably fitted for writing a nursing text. He not only details the duties of the nurse, but correlates her work with that of the attending physician.

Illustrations—The 245 illustrations and four color plates act as the visual interpretation of the text—each illustrates clearly, forcefully, some one important point.

Presentation—The "human side" of obstetric nursing is emphasized—the mental as well as the physical well-being of the patient is considered.

Glossary—A glossary of important terms is given. Numbers after the definitions refer to the pages of the text where the word is used.

NEW AND NON-OFFICIAL REMEDIES.

During August the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies

G. W. Carnrick Co.: Corpus Luteum—G. W. C. Co.

Gradwohl Laboratories: Sterile Solution of Mercury Oxycyanide—Gradwohl.

Lederle Antitoxin Laboratories: Pollen Antigens-Lederle, Solution Epinephrine-Lederle.

New York Intravenous Laboratory: Loeser's Intravenous Solution of Mercury Oxycyanide.

Parke, Davis and Co.: Antipneumococcic Serum (Palyvalent).

Winthrop Chemical Co.: Luminal Sodium Tablets, 1 1/2 grains.

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Reprints of original articles will be supplied at actual cost, provided request for them is attached to manuscript or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive the Journal should call for immediate notification of the editor, 508 Barnes Building, Muskogee, Okla.

Local news of possible interest to the medical profession, notes on removals, changes in address, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application. It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

EDITORIAL

CLIMATE AND TUBERCULOSIS.

In spite of the oft-reiterated statements of leading authorities that climate plays little part in the treatment of tuberculosis as compared with hygienic measures, it is rather amazing to what extent the contrary belief has taken hold, not only on the laity, but also on the profession. As a rule, when the diagnosis of tuberculosis is made, the patient, or some friend of the patient's will ask some such question as, "What climate do you think best for consumption, Doctor?", and often follows the statement that, while the resources of the head of the house are limited, he is ready to sacrifice all he has and move to this state or that state, if such procedure will afford the chance of a cure. And all too often, if the reports of patients are to be credited, the medical

consultant will admit that such a course is highly desirable, and urge that time is precious and that none be lost in speeding the patient to the land of healing. As to how the financing of the proper feeding, housing and nursing is to be done is a question to which scant attention is likely to be given. The consequence of this short-sightedness is a familiar and pitiful sight of all well advertised resorts for consumptives.

The real importance of the fetish of climate may be judged from the location of the most famous resorts. Saranac Lake, the first and best known of the sanatoria for tuberculosis is in the Adirondacks; Monrovia in southern California; Asheville is in the highlands of North Carolina, while Colorado, Arizona, New Mexico and Texas contain numerous and well patronized institutions of this type. Most of the other states boast one or more sanatoria which enjoy well deserved popularity. It is stated that the proportions of cures in these several localities of most divergent range as to moisture, altitude, temperature and weather changes, show no very striking divergence. Also it is true that the patronage of the individual institution is largely decided by geographical contiguity.

While bearing in mind that in the exceptional case climate may be the deciding factor for weal or woe, it is well to acquaint the average patient with the truth that the outcome of his illness is likely to depend on other factors. We can tell him that the best chance for recovery, as well as for the important education in self-care, is best secured at a well regulated sanatorium, chosen for accessibility or such other reasons as may seem best fitted to the case in hand; that, if such expense be beyond his means, his next best chance is to avail himself of home treatment in such locality as may be most convenient.

Let us by all means discourage the aimless pilgrimages in search of the golden clime, when the main need of the patient is to rest and not to roam.

BENJAMIN H. BROWN.

YOUR TUBERCULOSIS PATIENTS.

The Attorney General of the State of Oklahoma has rendered recently a decision concerning the admission of patients affected with tuberculosis to the state tuberculosis sanitarium and the State Health Commissioner is very insistent that all physicians comply with the law in reporting cases. In order that all may be prop-

erly informed a portion of the letter of the State Commissioner of Health is quoted:

"First: All contagious and infectious diseases are reportable by law. Tuberculosis falls within this class of cases.

"Second: The Attorney General, with regard to admittance of patients to the tuberculosis sanitariums, has ruled as follows:

"1. That every citizen of the state afflicted with tuberculosis must be admitted to these Sanatoria upon application.

"2. That in case of failure of a county to make provisions for defraying the expense of transportation and treatment of patients in these Sanatoria, as provided by law, the state can proceed against the Poor and Insane Fund of such county and enforce collection.

"3. That an authorization from County Commissioners is not required for the admittance of patients to the State Tuberculosis Sanatoria.

"When a physician reports a case of tuberculosis he performs a three-fold duty.

"First, his duty as a citizen by complying with the laws of his state.

Second, his duty to humanity by putting the State Board of Health in touch with tuberculars to the end that they may have the proper care and treatment.

"Third, his duty to protect his fellowman against a dangerous disease. Every patient admitted to these Tuberculosis Sanatoria relieves his family and the community of a menace to health."

TAKING A HUMAN INVENTORY.

Once a year, or oftener, the up-to-date business man takes a complete inventory of his stock and is thus able to know what is the exact condition of his business. Such an inventory shows what sections or departments are yielding good returns and what departments need special attention in order to put them on a paying basis.

If a yearly inventory is so important in business, how much more important is it that we should take a yearly inventory or examination of the various parts of our bodies to see if they are working properly?

Oftentimes, in business, a poorly paying line or one actually losing money can be changed so that it becomes the most successful once the inventory has shown the necessity of concentrating attention on this

particular department. In the same way, a part of the body not working properly can in many cases be brought back to complete health, provided faulty habits and wrong methods of living are corrected.

The only way of finding out what condition a person is really in is to have a complete medical examination. By this is not meant just a hasty examination of the heart, and lungs with a stethoscope. It means a systematic medical survey of the individual, including both mental and physical aspects, and taking into consideration his living and working conditions, habits, recreation, income, personal and family history, etc. Various special tests are required, including among others examinations of the blood and secretions, a test of the eyesight and hearing, an x-ray of the chest, and an examination of the nose and throat.

Some people are afraid of having a physical examination made for fear of finding out that there is something wrong with them. This attitude is as foolish as fearing to ask, when motoring, if you are on the wrong road; for in both cases the further you go without correction the worse off you are. Both in the matter of health and traveling, first find out if you have made any errors and thereafter, keep to the right road. Health like the highroad is abundantly marked with sign-posts if you are traveling too swiftly and will take pains to slow up and read them.

Once a year, at least, go to a competent physician and have a complete physical examination made. If there is nothing the matter with you, there is no greater satisfaction than knowing this fact. If, on the other hand, some part of the body is out of repair, learn what it is and what to do to build it up or keep it from growing worse. The human body is the only machine for which there are no spare parts. Learn to use rightly those you have.

THE GORGAS MEMORIAL FUND.

At the St. Louis Annual Session the Board of Trustees reported to the House of Delegates that in response to a request received from the directors of the Gorgas Memorial Institute of Tropical and Preventive Medicine for the co-operation of the American Medical Association, the Board had taken action which resulted in the appointment of a committee, representing the American Medical Association, to

act on the project. The following were appointed: Dr. George E. de Schweinitz, Philadelphia; Dr. Charles W. Richardson, Washington, D. C., and Dr. Fred B. Lund, Boston.

The House of Delegates unqualifiedly endorsed the Gorgas Memorial as a tribute to a past President of the organization and one of its most distinguished and loved members. At its recent meeting the Executive Committee of the Board of Trustees received the following statement from the committee and directed its publication:

STATEMENT AND APPEAL FOR CO-OPERATION.

As a result of the stimulating suggestion of President Porras of Panama, it has been resolved that a fitting memorial shall mark the humanitarian service of the late Major General William C. Gorgas, and the beneficent influence of his life and work on mankind throughout the world. Following the thought of President Porras, it has further been decided that this memorial shall take the form of a scientific institute for the study of tropical diseases and of preventive medicine.

No better place could have been selected than Panama City, the gateway between the Atlantic and the Pacific, where General Gorgas' well-planned and executed work made possible the building of the Panama Canal.

It is hardly necessary to call the attention of the medical profession to the far-reaching effects of General Gorgas' work on the welfare of the people of the whole world, especially in tropical and semi-tropical climates, and in all places subject to the inroads of infectious disease.

We of the medical profession remember him as our Surgeon General during the early part of the World War. We remember his prompt recognition of the necessity of bringing into active service large numbers of physicians and surgeons from civilian life. We remember his genial and kindly nature, his high character, and his steadfast effort directed toward the organization and equipment of the Medical Corps of the Army. We remember the patriotic response. We remember him as a great sanitary officer, to whom we wish to pay a lasting tribute.

A central committee has been formed, with Admiral Braisted, retired, ex-President of the American Medical Association,

as its president. The American Medical Association has appointed a committee of three to work in accord with the central committee, and through its members this appeal is made to the American medical profession.

The plan is to build at Panama an institute for the study of tropical and infectious diseases, with a hospital, laboratories, departments for research and all other facilities required in an institute of this character, erected and administered according to the most progressive, modern ideals. The Panamanian government, owing to the far-sighted, philanthropic vision of President Porras, has donated the great Santo Tomas Hospital, and also the ground on which it is proposed immediately to construct the buildings as they have been described. Dr. Strong has been appointed the scientific director.

In conjunction with this work in Panama, there will be established in Tuscaloosa, Ala., the Gorgas School of Sanitation for the purpose of training country health workers, sanitary engineers and public nurses, especially educated to deal with the problems peculiar to the Southern states.

An endowment of six and one-half million dollars will be required to enable the institute to carry on the work according to the plans which have been formed.

The Republic of Panama has demonstrated its sympathetic and practical interest in this enterprise with splendid liberality. The physicians of our country, and especially the members of the American Medical Association, surely will not disregard the memory of a former President, and will seize the opportunity to make in this respect a contribution of which they will be proud.

The campaign for funds is to be international. A large response is expected from North, Central and South America, since the nations of these countries have been the chief beneficiaries of the labors of General Gorgas. It is fitting that his co-workers of the American medical profession should be requested to respond generously to this appeal. It is hoped that every member of the American Medical Association will make as liberal a subscription as possible. Any sum will be gratefully received. Checks should be drawn to the order of the "Gorgas Fund" and should be mailed to the American Medical Association, 535 North Dearborn Street, Chicago.

Editorial Notes—Personal and General

Dr. B. J. Duckett, Fairmont, has moved to Crescent.

Dr. S. S. Haberly, Wapanuka, will in the near future move to Cordell.

Dr. C. H. Anthony, Oklahoma City, has motored to St. Louis, Mo., for a fortnight.

Dr. W. E. Dixon, Oklahoma City, spent his vacation in his cottage at Estes Park, Colorado.

Dr. A. S. Risser and family, Blackwell, spent the larger part of July and August at Hollister, Mo.

Dr. B. F. Nihart, Oklahoma City, has returned from Los Angeles, California, where he has spent the summer.

Dr. C. A. Arnold, Tulsa, left the middle of August to motor to Eldorado, Colorado, for a few weeks stay.

Dr. Lea A. Riley, Oklahoma City, has returned from Colorado Springs, Colo., where he has been spending the summer.

Dr. Edward F. Davis, Oklahoma City, is spending his vacation at Torrey Lake, Wyoming. He will return in three weeks.

Dr. J. A. Ross, Oklahoma City, has returned to Oklahoma after motoring to Los Angeles, Cal., and other western points.

Drumright, Oklahoma, is to have a new Hospital under the ownership of the Drumright Hospital Association of which Dr. Paul Sanger is president; Dr. C. L. Kahle, vice president; Dr. C. D. Blachley, secretary, and Dr. O. W. Starr, treasurer. Since the death of Dr. J. C. Stevens the Drumright Emergency Hospital has been closed and the new hospital which will be located in the Kasem Building will take its place.

DEATHS

Dr. J. C. Stevens, Drumright, Oklahoma, died August 4, 1922, age 57, from acute indigestion.

Dr. A. S. Crocker, Oklahoma City, Oklahoma, died of wound from accidental discharge of his own revolver, July 15, 1922, age 55. Graduate University of Louisville, Class of '90.

Dr. Lee Ben Clark, Atlanta, Ga., 54 years old, prominent in medical circles throughout the world through his writings on medical research, died at his home in Atlanta, August 24th, as the result of five weeks illness, which followed a stroke of apoplexy.

Dr. Crawford Lester Hall, Kansas City, Mo., whose death was chronicled in July, so worthily, efficiently and gracefully held his position on the stage of a long and useful life. Born in 1845, one feels the only explanation for his longevity, lies in his clean manner of living in every possible physical aspect, but, what is more, was his wonderful personality and his ingrained characteristic

of omitting nothing, in his daily relations with men. The prime of all of them was his fine regard for the rights of the other fellow, and his never forgetting the little niceties and courtesies, commonly denominated "Southern." As one would expect the man of so many clean attributes, kept all things about him in the same state of immaculate good taste. His departure will bring regret to many Oklahoman's who knew him when in their student days, as also the realization that his is a place not to be filled, they seem to have quit making men like that, so, this man who was replica of the finest social, ethical, and professional characteristics composes himself for the final and never ending rest, leaving behind an example not to be equalled. It is not flattery or inapplicable to say that it is more than unfortunate that every young medical student could not have had the extreme good fortune to associate with, and acquire some, of the ideals of the man. Certainly such association would always recall itself to the man as of a fineness peculiarly its own. If Dr. Hall had a real enemy among men, knowledge that he had one would come first as a surprise, then as conviction that his enemy was to be held in blame for no other hypothesis seems possible of acceptance.

As to his station in the medical profession, it is said that during his years of service, he had been honored with scores of places of honor, confidence and respect. For information of those who knew him not, the writer believes that it would be un-animously agreed by those calling him friend, that he was probably the handsomest physician in the United States. An idea may be had as to that by saying of him, that he was a son of the Old South. Such physical attributes, more often handicap than otherwise, were not so with Dr. Hall. In social contact with others his execution of the amenities was a source of delight to all. His regard for others was perhaps too much, rather it was too finely applied considering where he was casting his pearls. Once, arriving 12 hours late for a convention at San Antonio, our hotel reservations were not prepared by reason of an overhanging series of races, but Dr. Hall and I might have a double room with two beds, would that be satisfactory? We voted without dissenting voice that it would, but he was advised that I "snored sometimes"—that was all right—fatigue of the trip brought sleep at once and until I was suddenly awakened, Dr. Hall standing over me, dressed to the minutest detail, saying "Thompson, Thompson, that snoring, will you please turn over on your side"—I turned. Next day the little episode had become the talk of all San Antonio, that is medically, for it was known that rather than awaken me, when I was giving him outrageous treatment, he had gone down and appealed to the clerk to give him another bed anywhere. Not many of us would be so considerate, likely a chair would have been gently hefted through the air to the snorer's location with grace and an amount of profanity eloquently expressive of the real feelings in the case.

We believe that if man is due reward hereafter, that man is Dr. Hall, for men of that type live as sacrifices and objects of imposition from others. We know that many a beneficiary of his ability and unusual refinements will give him a tear of sincere regard for the man's sake alone.

COMMITTEE ON TOXIC EFFECTS OF LOCAL ANESTHETICS.

A Committee for the Study of Toxic Effects of Local Anesthetics has been appointed to act under the Therapeutic Research Committee of the Council on Pharmacy and Chemistry. The personnel of the committee is as follows, the several members representing the sections of the Scientific Assembly as indicated: Emil Mayer, chairman, New York (Laryngology); Elliott C. Cutler, Boston (Surgery); Henry S. Dunning, New York (Stomatology); Robert S. Lamb, Washington, D. C. (Ophthalmology); David I. Macht, Baltimore (Medicine); Charles Norris, New York (Pathology); Alexander Randall, Philadelphia (Urology), and Robert A. Hatcher, secretary, New York (Pharmacology).

The purpose of the investigation which it is proposed shall be conducted is to assist in increasing the safety, value and importance of local anesthesia. All information received by the committee will be considered strictly confidential. The committee will appreciate the co-operation of physicians. This co-operation can most practically be given by furnishing the following information to the chairman or to one of the committee:

1. Have you, during 1920 or 1921, observed any toxic effects—fatal or not—following the use of cocaine or any of the other local anesthetics?

2. If you have observed such toxic effects please submit a detailed report of each case; record, among other facts, data concerning the patient's general condition, the occasion for using the local anesthetic, the drug employed, the method of administration and the dose administered.

3. Kindly inform the committee of the name and address of any physician whom you know to have had any accident with any one of the local anesthetics.

PROGRESS IN PREVENTIVE MEDICINE.

The prevention of disease, President Vincent declares, is steadily tending to become the goal of the medical profession, although there has been and still is a tendency on the part of the average physician to look through the microscope of cure rather than through the telescope of prevention. The leaders of the medical profession have not generally taken the myopic view. They have on the contrary been the very prophets of preventive medicine, and they are increasingly regarding experience with individuals as a mean of protecting the community against it. The application, by men of imagination and organizing ability, of the scientific knowledge of the origin, spread, and prevention of disease has been a boon to mankind.

"But it is too early to feel complacent. Only a beginning has been made. Many diseases still baffle the health authorities. Whole regions have been almost untouched. Even the most advanced communities fall far short of what might be attained. The average individual remains relatively ignorant and negligent of sanitary science and of personal hygiene. Almost all physicians are still too exclusively concerned with the individual aspect of disease

"Stages in the progress of preventive medicine

are distinguishable. First comes control of the physical environment through pure water, milk, and food supplies, adequate sewerage and refuse disposal systems, improved housing, heating, and other than those whose causes are water and ventilation. Then follows control of diseases food borne. Various forms of occupational hazards and maladies are also attacked. Concern for the welfare of mother and child is a prominent feature at this stage. The third stage emphasizes the vital part which personal hygiene plays. It is roughly estimated that 80 per cent of the maladies which produce the total death rate cannot be directly controlled by the sanitarian. He must persuade individuals to conform to the laws of health and to report promptly the first sign that anything is amiss.

"A fourth phase just beginning to emerge has to do with economic, social, and mental influences. Income, standard of living, opportunities for social intercourse and recreation, all have important relations to individual and community health. Mental hygiene, which is coming to be recognized as a part of public health, deals with problems of defects and delinquency in children and criminality in adults, with nervous and mental disorders, with the classification, treatment, and custodial care of the feeble-minded and insane, and related questions. To the support of the work of the National Committee for Mental Hygiene the Rockefeller Foundation contributed during 1921, \$86,370.57."

TECHNIC OF PROSTATECTOMY AND ITS RELATION TO MORTALITY.

Hugh Hampton Young, Baltimore (Journal A. M. A., April 1, 1922), reviews the changes that have come about in the evolution of his operation of perineal prostatectomy, first performed by him in 1897. Among the cases in which the technic now in use was employed, 166 consecutive perineal prostatectomies, the mortality was nil. Among these patients there were four more than 80 years of age, and forty-nine more than 70, and about 30 per cent had kidneys so badly impaired as to require several weeks of preliminary catheter drainage and treatment with large amounts of water to restore the renal function sufficiently before operation could be safely undertaken. In only two cases was it necessary to supply suprapubic drainage in the preparatory treatment. All other cases were handled by either intermittent or continuous catheter drainage, great care being taken to avoid urethral suppuration. Young stresses the fact that by means of the perineal route, just as radical and satisfactory removal of the entire adenomatous prostate in one piece can be accomplished as by the suprapubic route, with, however, complete conservation of important anatomic structures (vesical sphincter, ejaculatory ducts, etc.). By means of the great natural advantages of the lower operation—ability to perform an open operation through visual inspection, to arrest hemorrhage and to apply sufficient packing for complete hemostasis, and with dependent drainage, an avoidance of sepsis, and the inconvenience of distention of the bowels which so frequently follows suprapubic operation—a remarkably low mortality can be secured and prostatectomy brought within the ranks of those modern major surgical procedures which are practically free from danger.

THE ROLE OF THE NURSE IN CURE AND PREVENTION.

"The modern hospital and doctors and surgeons are largely dependent upon the trained woman nurse, who has made an invaluable contribution to curative medicine. Public health administrators are recognizing the visiting or health nurse as equally indispensable to the success of public and personal hygiene. Already maternity and child welfare nurses, school nurses, tuberculosis nurses, and several other specialized types have taken their places in private health systems and in government departments. One state has announced as its goal the appointment of a health nurse for every 2,000 of the population; another has fixed the ratio at 1 to 3,000.

"Questions as to the exact function of the bedside nurse, the kind and length of training she should receive have been under discussion for some time. The advent of the health nurse raises similar problems. How far should her education coincide with that of the hospital nurse? In what should consist her special training? How much time should the entire course occupy? Should there be different grades of both bed-side and health nurses? Is there a place and function for a lay worker or a health-visitor? In 1919 the Foundation invited a group of persons who are most familiar with nursing problems to a conference which nominated a survey committee under whose auspices a competent expert has been making a study of the subject in all its phases. A report is promised in the summer of 1922. The expenses of the survey have been met by the Foundation.

"During 1921 the International Health Board contributed toward short courses for New York State nurse training. Four nurse training centers in France were aided not only to train visiteuses d'hygiene but to improve in certain hospitals standards of ward nursing and administration. The Cavell-Depage Memorial School of Nursing in Brussels will be an integral part of the reorganized hospital and medical school to which the Foundation is contributing a large sum. The International Health Board is co-operating with the new government hospital in Rio de Janeiro in establishing good standards of nursing under the leadership of American trained nurses. The Foundation supports a nurse training school in connection with the Peking Union Medical College. A survey of nurse training in Great Britain and on the Continent, to be begun early in 1922, has been authorized."

SEQUELS OF ACUTE EPIDEMIC ENCEPHALITIS.

Morris Grossman, New York (Journal A. M. A., April 1, 1922), reports the results of his study of ninety-two cases of acute epidemic encephalitis from one to three years after recovery. Only ten of the ninety-two patients examined in this series were free from symptoms and showed no residual signs. Fourteen others had recovered sufficiently to allow them to return to their work. These patients, however, still showed residual signs of their previous illness, and complained of various forms of psychic disturbance, such as insomnia, irritability, poor memory and fear neuroses. Two patients showed no change in their physical condition since their last examina-

tion one year before. Four patients showed slight improvement in their symptoms and physical signs, but were still far from being well. The remaining sixty-two patients showed a serious, more or less progressive involvement of the central nervous system which was evidenced by disturbances in the motor, psychic or autonomic functions. Of these sixty-two patients, forty-two showed a clinical syndrome which closely resembled that seen in paralysis agitans. However, their emotional responses were more active than those of the average patient with paralysis agitans. They were restless and irritable. This mental state formed a striking contrast to the resignation usually found in many of the patients suffering from true paralysis agitans in the later stages. Barring an occasional case of disseminated sclerosis or of diffuse cerebral arterial sclerosis, encephalitis seems to be the one disease that shows most frequently lesions involving the basal ganglions and the pyramidal tracts. It is emphasized that myasthenia gravis, disseminated sclerosis, Huntington's chorea and dystonia musculorum deformans may be simulated by epidemic encephalitis. The present state of knowledge does not warrant establishing any definite etiologic relationship between epidemic encephalitis and paralysis agitans, multiple sclerosis, and the various other clinical types that follow encephalitis. Another outstanding feature that was noted in the re-examination of these patients was the strikingly large number that showed increase in the activity of the abdominal reflexes. This was found to be the case in seven of the eight patients who showed definite evidence of involvement of the pyramidal tracts.

TEAM WORK FOR WORLD HEALTH.

"The outlines of a world-wide campaign for health are beginning to emerge. Scientific research workers in many national centers are in constant communication. Knowledge is being applied more effectively to the problems in the field. Governments are sending attaches of hygiene into each other's territories. Total statistics on an international scale are being reported more accurately. Prompt notification of epidemics is being facilitated. Outposts against plague and other diseases are being stationed and supported. Leaders and technical experts are in training in larger numbers and under more favorable conditions. Fundamental medical education is becoming more thorough and more cosmopolitan. Popular knowledge about preventive medicine and personal hygiene is increasing. Intercommunications of many kinds are being improved and multiplied. All these things are fostered by many methods and agencies such as working agreements between governments, the Health Committee of the League of Nations, and the League of Red Cross Societies. It is the purpose of the Rockefeller Foundation and its Boards to have a part in this world-wide team-work for preventing disease and bringing about improved conditions of health, and thus 'to promote the well-being of mankind throughout the world.'"

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THE DIFFERENTIAL DIAGNOSIS OF CARDIAC ARRHYTHMIA WITHOUT THE USE OF THE ELECTRO-CARDIOGRAPH.

W. A. LACKEY, M. D., Oklahoma City.

Due to the study and investigations of Lewis, McKenzie, Flack, Keith, His and Twarh, we are able to differentiate the jumbled-up heart irregularities, known as Cardiac Arrhythmias without having to use the Electrocardiograph, which, I think, is impracticable for the general practitioner and surgeon.

It is necessary for us to know something of the mechanism of the normal beat, so that we may understand the abnormal better. The stimulus which causes the heart to contract in normal rhythm arises in the sino-auricular node, situated in the right auricle, just below the superior vena-cava. The impulse is conducted from the auricle to the ventricle through the auricular ventricular bundle (known as His' bundle). This bundle divides into a right and left branch. It spreads out into a network which is distributed to the papillary muscles and walls of the ventricles. Normal contractions are due to the fact that this organ possesses the functions: 1st—Stimulus production, 2nd—Excitability, 3rd—Conductivity, 4th—Contractility, 5th—Ton-icity. These functions seem to be co-ordinated due to the cardiac nerves which apparently have both a direct and indirect modifying and controlling function.

If any portion of the foregoing mechanism fails in its proper co-ordinated function, either from the standpoint of time, place, or intensity, arrhythmia will occur. I will try to describe to you seven kinds of heart irregularities, which, I think, will cover the field, all of which can be diagnosed without the use of the electro-cardiograph, with the possible exception of Heart Flutter. They are: 1st, Sinus Arrhythmia; 2nd, Extra Systole; 3rd, Auricular Fibrillation; 4th Paroxysmal Tachycardia; 5th, Heart Flutter; 6th, Pulsus Alternans; 7th, Heart Block.

SINUS ARRHYTHMIA, described frequent-

ly as juvenile arrhythmia, because of its frequency in the young. It comes from a nervous condition, an affection of the tenth nerve, as a rule. Under normal conditions, a deep inspiration tends to accelerate a deep expiration to retard the pulse. In sinus arrhythmia, you get this condition with a normal inspiration and expiration. Sinus arrhythmia may also occur independently of the respiratory act. It is characteristic for it to occur during convalescence from infections. The heart sounds are not altered in this condition and it may be diagnosed as a rule by having the patient hold its breath and the irregularity will disappear. Atropine will also abate it.

EXTRA SYSTOLES, or premature contractions, are produced by extra stimuli in the auricle, the bundle of His, or the ventricle, normal stimuli originating at the sino-auricular node and transmitted through the bundle at spaced intervals, are interfered with and we have premature contractions which gives us a dropped beat. This premature contraction usually comes early in Diastole and is weak, not always perceptible at the wrist. The beat of the premature contraction and the beat following it occupy the time of two normal beats. The premature contraction is weak and early and the beat following is strong and the time between the two is longer, so much so, that the patient may notice it and become alarmed when in reality, he need not be, for it is not of a serious nature, unless he has a myocardial weakness causing it. Extra systoles usually occur with a slow pulse. When the rate is increased, they disappear and may be differentiated from auricular fibrillations by having the patient exercise. When the rate is increased the premature contractions cease while with auricular fibrillations, the irregularity increases.

AURICULAR FIBRILLATIONS, characterized by a regular irregularity of the heart beat both as to time and rhythm, due, as a rule, to serious organic lesions of the heart muscles. The auricles are exhausted and these contractions being fast and irregular, they come through the auricular ven-

tricular bundle in such a weak and irregular way that the contractions of the ventricles are a jumbled up, constant, irregular contraction of which quite a few fail to come through to the wrist and this condition is known as the pulse deficit. This condition may be best demonstrated by having an assistant count the radial pulse at the wrist, while you count the apex beat with a stethoscope for one minute, both of you using the same watch, the difference will be the pulse deficit and when it amounts to as much as 40 beats per minute, the prognosis is grave.

PAROXYSMAL TACHYCARDIA — Its chief characteristic is that it begins and ends suddenly. The rate is 150 to 280 per minute. Its cause may be neurogenic or myogenic. Exercise, posture, or atropine, have no effect on it. Pressure on the right vagus nerve will stop about 50 per cent of the attacks.

AURICULAR FLUTTER—This is a condition in which abnormal focus within the auricle gives rise to rapid, regular contractions, varying in rate from 200 to 400 per minute. This stimuli is usually conducted to the ventricles 1 to 2, 1 to 3, or 1 to 4 ratio. The ventricular rate is usually one-half the auricular rate. The rate is wonderfully constant and is uninfluenced by position, exercise, or vagal stimulation. In an elderly person with a ventricular rate of over 120 that does not change with exercise or position, you may with safety make a diagnosis of Flutter.

PULSUS ALTERNANS—This is a condition in which every other pulse wave varies in height, with a normal pulse rate and a large and small beat. You may know that you have a myocardial condition to deal with that is grave. If you are suspicious that you have a pulsus alternans, you can demonstrate the fact by applying a blood pressure apparatus. The cuff is inflated until the pulse is halved. As you lower the pressure you will finally get the weak beat and the pulse will then be doubled in number or back to normal.

HEART BLOCK is a term used to describe the blocking of the impulse of contraction somewhere between its origin at the sinus auricular node or its termination in the fibers of purkinje in the ventricles. The blocking may be complete and when it is, the ventricles originate their own contractions and are about 30 per minute. It is, however, usually a partial block and comes through 2 to 1, 3 to 1, or 4 to 1 contractions of the auricles to one of the ventricles. You

should think of block when the pulse are less than 50 per minute. If you have it, an examination of the jugulars will show 2 or 3 waves to the carotid's one. Digitalis improperly given often causes block. The rate is usually halved when digitalis is the cause of it. Complete block is usually due to an organic disease of the Bundle of His, Syphilis being the most frequent cause of it.

SUMMARY.

In making the diagnosis of the different arrhythmias without the assistance of the Electrocardiograph, I would suggest that in a young person with irregularity look for sinus arrhythmia. The pulse will be increased on inspiration and slowed on expiration. The irregularity will disappear if you have patient hold his or her breath and may be differentiated in that way. Extra systoled or premature contractions, is usually found in people past middle age and when they are at rest, the premature contraction and the one following it occupy the time of two normal contractions, therefore the beat following the premature contraction is larger and longer, so much so, that it is noticeable to the patient. Premature contractions may be differentiated from other irregularities by having the patient exercise as they always disappear when the rate reaches 120.

Auricular fibrillations may be known by their absolute irregularity of rate, rythm, and volume. There is a difference of the apex beat and of the pulse at the wrist. This is known as pulse deficit. The irregularity increases with exercise. Auricular flutter is the most difficult arrhythmia to diagnose without the use of the electrocardiograph. It may be suspected when a pulse of 180 is suddenly halved. The rate, as a rule, is regular and not influenced by position, exercise, or stimulation. I think it is well to suspect auricular flutter in any aged person with a ventricular pulse of over 120 that is constant.

Paroxysmal tachycardia is a rapid heart action usually of over 180 beats to the minute that comes on suddenly and ends suddenly without the patient having given any history or symptoms of a heart condition. It is differentiated by its sudden beginning and ending. Position and exercise has no effect on it, but pressure on the right vagus nerve may stop the attack.

Pulsus Alternans may be diagnosed when every other beat is weak and small. It must be every other beat. This condition can best be found out by pressure over

the brachial artery where the small and weak beat may be eliminated and the pulse is then halved. When it is suspected, if you will take the patient's blood pressure you will get a beautiful demonstration of eliminating the weak contraction and I have seen a difference of 50 mgs. of mercury between the strong and the weak. Heart block is suspected when the pulse is less than 50 per minute. Compare pulse waves in jugular with carotid, the jugular wave will be 3 or 4 times more. Rate will not increase with exercise.

Opening Discussion: LEA A. RIELY, Oklahoma City.

The anatomist tracing out the enervation of the heart and the physiologist coming along and testing out the functions of these nerves, vivisection on the lower animals has all given us an idea upon which our present conceptions of cardiac arrhythmia are based.

These movements of the heart are graphically traced by the Electrocardiograph and polygraph under various conditions and thereby our knowledge is also enhanced. McKenzie, however, is the pioneer in these studies and he laid the foundation of his knowledge as a general practitioner while in attendance on obstetrical cases, so those who have not access to these instruments of precision do not need to think they are seriously handicapped. These same instruments if too much relied upon do not produce the great clinicians which we formerly had.

While the functions of the heart muscle allow it to perform its movements independently, nevertheless nervous influence has a great power in affecting the action of the various fibres.

The fact that the heart muscle begins normally at the sinus but it may begin at any point in the heart which is more excitable than its usual point giving rise to various forms of cardiac irregularity.

Mere cardiac irregularity does not bespeak a bad prognosis. Other characteristics of the heart are more important, *i. e.*, the response to effort or exercise and ability to go back to normal on repose.

In young patients recovering from an acute infection, there is no danger in mere irregularity, in fact, McKenzie says it is an evidence that the heart has come through unhurt.

Sinus arrhythmia frequently comes on in the young after fevers during slow respiration, apex beat and radial pulse corres-

pond. When there is a definite and stated relation to respiration, no further evidence is required, but deep breathing always helps to bring it out.

When the function of tissues uniting auricle and ventricle is impaired, a disturbance of the sequential action is brought about. In complete heart block, two separate rhythms are maintained. One starts in and contracts the auricle, the other originates in and contracts the ventricle.

Digitalis often brings out dormant heart block in rheumatic cases. The added effect of the digitalis may be due to its effect on the vagus nerve as it can be removed by atropine.

Extra systoles or premature contractions where auricle or ventricle responds to a stimulus from an abnormal point of the heart but where the fundamental rhythm is maintained.

Extra systoles may be noticed throughout life even to a good old age.

Pulsus alternans as its name implies, means a halving of the beats when the cuff of sphygmomanometer is let down to a certain point. It indicates a very badly crippled heart and a demise within a year.

Auricular fibrillation where you find your pulse deficit your irregular irregularity as contrasted with the regular irregularity in the above conditions it is especially associated with mitral stenosis.

McKenzie says 90% of heart deaths die in fibrillation. Many get up and around after doses of digitalis to be floored again when some unusual stress, mental or physical, comes upon them.

Paroxysmal tachycardias a most interesting clinical observation coming on and off with abruptness as if some piece of machinery were set in motion.

Discussion: DR. J. A. RODDY, Oklahoma City.

I wish to reiterate the compliments tendered Dr. Lackey and concur with much of what he has said, at the same time, I invite your attention to the fact that only half the truth of the matter has been presented. It is conceded that in many cases it is possible to identify the particular type of arrhythmia one is dealing with; it is equally true that in many other cases identification of the type of arrhythmia is important and can only be accomplished by use of the electrocardiograph. Since January 1st of this year I have examined more than 100 cardiac cases, both physically and with the electrocardiograph and have, a number of times, detected and identified

arrhythmias with the electrocardiograph, when I could not do so otherwise, and I know that in these particular cases no one else could have done differently. I regret that you gentlemen were not at my clinic Tuesday. I had the cases referred to there for the purpose of demonstrating this fact. These patients are still in the city and I shall be glad to have anyone who wishes, examine them.

Sir James Mackenzie (1), previously referred to in this discussion, believes the ideal state would be that in which he could regularly and accurately make a diagnosis from a consideration of the patient's symptoms alone; we all agree with that; likewise, as he does, we too know it is impossible. The important part of Mackenzie's teaching is that most of the signs and symptoms of heart disease with which we are familiar are the signs and symptoms of its *late* stages, and what we have not, but must develop, is a knowledge of the *early* signs and symptoms.

From my own work I know one gains a more complete and accurate knowledge of the heart's condition, in any case by using the electrocardiograph, than is possible without it and that the electrocardiograph frequently yields important information that is not otherwise procurable. For these reasons it seems obvious that to learn most about the subject and to be best able to arrive at a correct diagnosis when cardiography is not available, that we should have all our cardiac patients examined with the electrocardiograph when possible. Of more weight than any words of mine, are those of J. Strickland-Goodall (2), based on a study of 13,231 cases during a period of ten years. He says: "It is probably correct to say that there are few manifestations of cardiac disorder so obvious to both the patient and the doctor as the condition spoken of as the premature contraction or extrasystole." (Let me add that not infrequently the condition exists without the patient being conscious of it.)

"Different diagnosis of the different types is often of the greatest importance, and although various suggestions have been made to enable one to do so, it seems to me that the only reliable method is the electrocardiographic."

(1) Mackenzie, James: *The Position of Medicine at the Beginning of the Twentieth Century Illustrated by the State of Cardiology*; N. Y. Med. Jour., Vol. CXV, No. 2, Jan. 18, 1922.

(2) Strickland-Goodall, J.: *The Premature Contraction and Its Significance*; N. Y. Med. Jour., Vol. CXV, No. 4, Feb. 15, 1922.

MITRAL STENOSIS.

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With the human body, as with each living organism, in order that each function be at its best, it is necessary that the assimilation of foods and the removal of effete matter be continuous. It is imperative that a continuous supply of assimilable nourishment be provided and a removal of metabolic products be taken care of continuously. Both of these functions are performed by the blood. To do this, however, it must be supplied in a never-ceasing stream, in and out of the tissues, and in a volume varying with the activity of the various organs and tissues at different times; and maintained under a given pressure and at a certain velocity.

The system utilized by the human economy for this purpose is termed the circulatory system, this consists of a central or dominating organ called the heart, which has as its agents a series of diverging and ramifying tubes, called the arteries, which convey the blood to the capillaries, a network of very fine, thin, osmotic passageways, which serve to deliver nourishment to the tissues and remove debris, also they connect the arteries with the veins, a network of converging tubes emptying the blood back into the heart.

The heart is anatomically and physiologically divided into two sides, right and left, and each side into two distinct chambers, right auricle and right ventricle, and left auricle and left ventricle. There are four valves in the heart so situated and functioning in health as to offer complete resistance to the back flow of blood when the heart functions, and to hold the blood at a given pressure, called the pulse pressure, when the heart is quiescent.

When this works as planned by the Architect of the Universe, there is complete harmony, circulatorially speaking.

Tuohy (1), says: "The earlier signs of cardiac disease are hidden, because, paradoxically, it begins as something else. The classical signs of mitral stenosis cannot occur until scarring more or less dense has had time to develop."

Each of us has been brought suddenly face to face with a well developed presystolic thrill and murmur in a patient that we had previously treated for some throat, tonsillar or some rheumatic condition and had flattered ourselves that we had been in-

ternists enough to pilot our patient past this dangerous reef. Possibly the complaint had been of too trivial import to merit more than a passing interest to our then busy minds.

The mitral valve is a two-cusp valve (sometimes called the bicuspid valve), situated between the left auricle and left ventricle and is subjected to greater pressure and harder usage than either of the other valves of the heart. And as a rule of mechanics informs us, "The more vigorous the force and uneven the pressure the greater the wear of the parts, other things being equal." Knowing this to be true we would expect the mitral valve to be the most frequently damaged valve of the heart, and this is a fact.

Our paper today will deal with mitral stenosis, the most frequent basis for auricular fibrillation, and by far the most important, as well as the most persistently progressive single lesion of the heart.

The "Mitral Facies" has for some time been recognized as an entity, that, with a stunted, dwarfed development, and an ambition out of all proportion to their physique, presents the characteristic early development resulting from the mitral stenotic lesion.

This lesion is most prevalent in young girls, explained by its following the infections, 75% are due to rheumatism as evidenced by growing pains, and is practically always a double lesion. Chorea, tonsilitis, scarlatina, diphtheria and the septicemias. The predominance of lesions in girls being due, no doubt, to girls being treated as hot-house plants, and being frequently overheated and over-clothed (especially in their young days), lack of exercise and improper diet leaves them in a weakened condition and an easy prey to the infections.

Osler (2) divided mitral stenosis into *Functional* or *Spasmodic* mitral stenosis and *Organic* mitral stenosis.

Functional or *Spasmodic* mitral stenosis may be due to a spasm of the sphincter muscle of the mitral orifice or of the papillary muscles. This occurs frequently in hysterical, anemic, and choleric subjects.

The *Organic* due to anatomical changes produced by inflammatory infiltration, or contractures due to cicatricial changes. This is practically always due to endocarditis.

Post Mortem, there are two anatomical forms:

The Button Hole Mitral and *The Funnel Form Mitral.*

The button hole mitral presents cusps that are thickened, shortened, and adherent. Often on account of the progressive inflammatory deposits there forms a solid mass around the slit-like opening. This form of lesion gives a blowing murmur—crescendo in type, high-pitched becoming low, then back to high pitch again—due to the intra-auricular pressure forcing the blood through the slit-like opening; the pressure becoming less as the volume of blood dammed back becomes less; then increasing as the muscular walls of the auricle try to force as much blood as possible through before the ventricular systole. This murmur is accompanied by a diastolic pre-systolic thrill that is almost pathognomonic and is usually present before the murmur is discernible and remains after the murmur disappears with broken compensation. However, we may anticipate the liveliest thrills when the auricle is functioning and the murmur is present.

This murmur and thrill occurs with or directly following the second sound of the heart, diminishing in intensity, then increasing to very intense up to the first sound of the heart; which seems to terminate it very abruptly in a sharp, slamming-like sound. This murmur when heard is absolutely a compensated murmur, and may completely disappear in broken compensation. When you detect its weakening and disappearance be on your guard as this is your danger signal and means that the end approaches.

The soft, diastolic murmur points more conclusively to early disaster than the sharp, grating, snappy sounds that indicates good muscular tone and valves with some degree of function.

The second post-mortem form is the *Funnel Form Mitral*. This results from a less violent form of destructive inflammation and shows adhesions of valve borders only, the tips of the cusps remaining free and unaffected. This gives the valve a peculiar shaped opening, and produces a presystolic blubbery murmur, due to the flaps vibrating against the regurgitating current of blood.

There are two clinical forms of mitral stenosis.

Those With Slow Pulses and Fair Regularity, and

Those With Auricular Fibrillation, Flutter or Arrhythmia.

The first class or those with fair regularity, and a slow pulse, represent the best class of mitral stenotic risks and includes those cases of compensating hearts.

In this case the pulse is usually very slow as the systole is delayed to allow the left ventricle to fill, as nearly as possible, before discharging its load into the arteries; thus maintaining a fair blood pressure. As a rule the pulse is small in volume, due to a vaso-constriction. Thus the physiology of the system to overcome the effects of an insufficient systemic blood supply. This class of cases is usually discovered by chance as they rarely produce symptoms until late. About one-third of them come complaining of some gastro-intestinal lesion—resulting from congestion of liver, stomach, spleen and small bowel. Hemoptysis is present in about ten per cent; due to a congestive state of the lungs. Later when the crescendo murmur fails or is replaced by a low-pitched murmur, the irregular pulse appears and the evidence of auricular contraction disappears, producing what McKenzie has been pleased to call the *Disorderly Pulse of Mitral Stenosis*, because it has no orderly sequence. However, irregularity of the heart is very frequently present even in the early stages of mitral stenosis. The heart remaining regular while the patient is at rest and becoming markedly irregular upon a small amount of exercise. As a rule these patients suffer with cold extremities and rest very much better when the head is supported at night by two or more pillows.

This is the lesion causing sudden death from heart failure and here the mortality statistics begin to loom large during the child-bearing period, as over seventy-five per cent of the mitral stenotic lesions are in women; and a large per cent of these women are tubercular. Mitral stenosis is especially dangerous to women in that period of high blood pressure following the climacteric. Accidents in mitral stenosis are very common. As frequently public speakers, suffering from this lesion, when finishing an after-dinner address, die very suddenly. Also, these sufferers are very prone to acute congestion of the lungs, acute infarcts with hemoptysis, and sudden death in an acute cardiac failure. Embolism is frequent from a clot in the left auricle, or from detached vegetation from the mitral orifice. Plugging of the right sylvian artery with resulting aphasia and hemiplegia. Also, there occurs embolism of peripheral arteries and rarely a widespread thrombosis.

Those with Auricular Fibrillation: This is decomposition in some stage. The flutter of fibrillation may be almost positively diagnosed by the absence of the normal pre-systolic wave and the presence of a direct systolic jugular pulsation. Auricular fibrillation, according to Green (3) may safely be assumed when the pulse is irregular and above one hundred and twenty. If irregular and below one hundred and twenty, heart block is to be seriously considered. In his clinic forty per cent of all arrhythmias are due to auricular fibrillation, and fifty per cent are associated with mitral stenosis. This state of fibrillation may persist for years; the auricle acting as a reservoir and the right ventricle supplying, by means of pressure through the pulmonary circulation, the force necessary to deliver the blood to the left ventricle through the slit-like opening in the stenosed mitral.

The mitral stenotic murmur requires quite a careful technic for its detection, as the bell of the stethoscope should touch the chest wall just barely enough to make an even contact; for a forcible application of the stethoscope will render a typical murmur atypical or wholly obliterate it. The neglect of this precaution is the cause of this murmur being the most frequently undetected murmur of the abnormal heart. When properly listened for, the mitral stenotic is the most easily recognized of the heart murmurs. Even when compensation is far gone and there are no murmurs, the snapping first sound will guide you in your diagnoses.

The murmur from mitral stenosis is the most inconstant of all murmurs. It is more easily heard when the patient is standing and after exercise. When leaning forward and to the left a short, low-pitched rumble or roll immediately precedes the systole, increasing in intensity as it approaches the first sound. This and the snapping, shock-like, first sound are usually confined to an area not greater than the size of a silver half-dollar, and immediately over the apex. Another characteristic is that the diastolic sound is prolonged so that the interval between the second sound of the one cycle and the first sound of the next is unduly prolonged. Frequently the second sound is reduplicated (double-shock sound of some authors). Sanson states that the double shock sound may precede all other evidences of this lesion.

The loud, sharp, slamming quality of the first heart tone as heard over and near the apex is peculiarly characteristic, and,

as a rule, maintains its peculiar quality even when the auricles are in fibrillation. The first sound is extraordinarily forcible and is usually transmitted to the back where it can be heard inside the left scapula at its lower angle. In impeding dilation all murmurs become weak, and on dilation, incompetence or regurgitation of the tricuspid valve the presystolic murmur disappears entirely.

Auscultation over the pulmonic area, in the second interspace two inches to the left of the sternum, gives a decidedly accentuated second sound as long as there is compensation. As compensation fails this sound becomes less distinct. In this area there is frequently a reduplication of the second sound.

In uncomplicated lesions there is no discernible murmur in the aortic area.

There is rarely a galop rhythm, protodiastolic occurring in relative insufficiency. This is not pathognomonic as it occurs in some normal hearts when the patient is laying on his left side and is very common in slow hearts.

Occasionally the mitral stenotic murmur is heard fairly plain over the epigastrium. This is due to hypertrophy or dilation of the right ventricle, and is a sign of a severe lesion or a weak resistance or both.

Inspection may reveal a normal apex or an apex displaced one or two inches to the left, crowded over by the hypertrophied right ventricle. There may be marked, para-sternal pulsations and pulsations of the lower segment of the sternum. In children, especially, the praecordia may bulge and pulsate from the second to the sixth rib along the left border of the sternum.

In Palpation we have a valuable aid, as the diagnosis may frequently be suspected from palpation alone; especially when the lesion is well compensated. There is a purring thrill transmitted to the hand, not unlike that felt when holding a purring cat; and when it is once felt cannot be mistaken for anything else. The area of thrill covers the location of the apex beat and rarely reaches above the fourth rib, usually felt better on expiration and after exertion. Diastolic in time, rising crescendo-like and terminating in the sudden shock of the first sound of the heart.

Percussion may not divulge any change until the left auricle has dilated considerably, and cases are on record where the left auricle had a capacity of as much as two quarts. The changes in cardiac outline are

usually to the right, the right ventricle has to furnish the left auricle with the propelling power to overcome the stenosed valve, as the blood vessels in the lungs have practically no expansile power they lend themselves admirably to this compensatory function, this causes a hypertrophy and dilation of the right ventricle which frequently progresses to a permanent injury to both valves in the right side of the heart. This merges into a complete decompensation with its multitude of symptoms. The dilated left auricle is almost wholly posterior and yields almost no demonstrable physical signs and usually may be detected only by means of the x-ray.

The *x-ray* shows a characteristic prominent shadow of the left auricle on the upper left border of the heart between the shadow of the ventricles and of the pulmonary artery.

The Blood Pressure in pure mitral stenosis is likely to be low, but as a pure mitral stenosis is rare and regurgitation and vasoconstriction equalize the pressure it rarely shows abnormal. Some cases show a slightly raised blood pressure. When irregularity sets in the blood pressure may show wide variations, from one hundred to one hundred and sixty or more systolic.

The Subjective Symptoms are usually slow of development in the adult. Slight shortness of breath on exertion may be the only symptom for years, even in very severe stenosis. In others, there will be a very noticeable irregularity of the heart's action with shortness of breath.

One of the early subjective symptoms that has been brought very forcibly to my attention is that most of these patients taste blood on any extraordinary exertion, excitement or excess, and that without any ocular blood.

They complain of dyspnea progressing to cough, bronchitis, slightly blood streaked sputum. Cyanosis is noticeable.

Sometimes the so-called cardiac asthma will be the presenting symptom. This is usually accompanied by shortness of breath.

When a bronchitis sets up with these patients, the mucous membrane in the lungs being congested and hyperemic,—it takes very little inflammatory swelling to close the small bronchi, thus causing these patients to suffer from severe air hunger. Hence their constant cough, blood streaked sputum and congestion of lungs with various **rales**.

With the beginning of decompensation they have venous congestion, as evidenced by blueness of face, lips, nails, and surface of body. Often they have nose bleed, spitting of blood, and usually insomnia. When seen at this stage for the first time it is often diagnosed as tuberculosis. I urge that you use care, for at this stage rational treatment may add several years of comparatively normal living. Frequently there is an increased secretion of mucous in the bronchial tubes and throat which is often very troublesome and the cause of considerable coughing.

There are changes in the apex of the left lung together with hoarseness due to a congestive condition from the enlargement of the left auricle. This resulting in a mechanical pressure stasis which gives a foreign percussion and osculation sound. This dilatation of the left auricle results in a back pressure in the whole lung with ultimate strain of the right heart. More than two-thirds of these cases will come complaining of cough and dyspnea. At this stage even, there may be only faint and inconstant signs after the most careful examination. Listening intently at the rear base of the lungs in a sitting position after the patient has been laying down for some time, there will frequently be heard crackling rales which are very valuable from a diagnostic standpoint. Chest pain is a valuable sign due to overcrowding of the heart, causing acute distress.

An occasional symptom is paralysis of the left recurrent laryngeal nerve due to a pressure neuritis rather than to an actual destruction of the nerve. According to Garland and White (4) the laryngeal nerve is squeezed between the left pulmonary artery and the aorta or aortic ligament causing this symptom. Any continuous hoarseness or huskiness of the voice of doubtful or obscure origin should elicit a very careful and painstaking search for a mitral stenotic lesion. And this in connection with a wide area of impulse in the second, third and fourth left interspaces may lead to a diagnosis of aortic aneurism.

Sphygmograph Tracings show short up-strokes and long wave which slowly disappears. Irregularity is the rule. According to the older authorities there are four cardinal diagnostic signs:

- 1st. The localization of the murmur.
- 2nd. The time diastolic.
- 3rd. The purring, vibrating thrill.

4th. The abrupt termination in the first sound of the heart.

But McKenzie says that "Where there is adequate compensation a crescendo presystolic murmur, and in auricular fibrillation, a diminuendo apical murmur, diastolic in time means mitral stenosis."

There are two conditions that you will need to keep in mind when making your differential diagnosis:

Pericardial adhesions which give a diastolic rumbling apical murmur but not so peculiarly localized, nor has it the abrupt ending in the slamming, snappy, first sound.

From Tuberculosis by absence of the tubercle bacilla, and showers of fine crepitant rales, as well as other classical signs of tuberculosis. Bibliography.

1. Tuohy—The Journal Lancet.
2. Osler's Modern Medicine, Lea Bros. and Febiger.
3. Green's Medical Diagnosis, Lippincott Co.
4. Garland and White, Archives Internal Med., Sept., 1920.

Discussion: J. A. RODDY, M. D., Oklahoma City.

There are several aspects of this excellent paper I would like to comment on. Relative to the facies in this disease let me quote Russell-Wells: "The lips and mucous membranes are cherry red or purplish, cheeks bluish pink, there are slightly dilated venules on the face, and elsewhere, the eyes are watery, not infrequently pinkish." As to fibrillation, I wish to state that fibrillation is not confined to the stage of decompensation, if by that expression is meant the state in which one is incapacitated for work or confined to bed. Fibrillation, in mitral senosis, as in other cardiac diseases, may occur intermittently or persistently, without any marked irregularity of pulse, in a relatively comfortable, ambulant patient, with relatively slight cardiac symptoms.

McKenzie, discussing prognosis in various forms of valvular disease states that mitral stenosis, occurring after maturity, the result of passed rheumatic infection, offers the best prognosis.

Mitral stenosis existing in a pregnant woman requires special attention. The recently published conclusions of an extensive study of this subject in the New York City Cardiac Clinic indicates that women who have good compensation, no evidence of myocardial degeneration and are not embarrassed by a work test, pass through labor successfully; that pulmonary edema during or soon after labor causes a high

mortality among those having poor compensation, myocardial degeneration or reacting badly to the work test.

The work test referred to is lifting a 12-pound dumb-bell from the floor to above the head 25 times; this exercise does not embarrass those with good hearts or hearts capable of carrying them through labor. Our knowledge of the great amount of work taken from the heart by rest in bed and the marked improvement in its functional capacity under such conditions, should lead to as good results in the care of pregnant women with mitral stenosis by prolonged rest in bed, as such treatment affords the tuberculosis.

Discussion: DR. LEO A. RIELY, Oklahoma City.

One of the outstanding medical developments in the great war was the prominence given to mitral stenosis. General Order No. 21 did not permit of any one entering the U. S. Army who had a mitral stenosis or aortic regurgitation. The heart muscle being strong, no other murmurs counted.

The incidence of mitral stenosis in the adult and especially in females is almost as great as insufficiency.

Most physicians who are not watching out for these symptoms do not believe that, and older authors did not put the stress on finding these defects as we do now.

Mitral stenosis is practically never found before puberty, but has a slow and progressive development, giving the history of growing pains, tonsillitis, rheumatism and chorea or some acute infection in childhood.

The development of a dry cough, later with basal rales, often point more to the lungs than cardiac region and many cases are thought to be developing tubercular troubles.

The old idea that mitral stenosis does not allow activity of tubercular origin does not hold water and we frequently find them present in the same individual.

The mitral facies is characteristic of the trouble, *i. e.*, a florid complexion with red cheeks and lips, venules standing out in prominence giving them an entirely different aspect from the pale anaemic appearance of the aortic facies. The quick, snappy first sound is produced by the ventricle contracting quickly on its partly filled contents. Also this does not allow the ventricle to hypertrophy.

The thrill is quite marked in many cases.

The presystolic rumble with dilation to the left and, in incompetency, of dilation to the right, also. Diffuse apex beat also is noted.

As the heart muscles become impaired and as extra work or sudden exertions are put upon it auricular fibrillation begins to develop with edema of legs, enlargement of the liver and spleen and even sometimes a pulsating liver.

McKenzie says that 90% of hearts fibrillate as they become more damaged. Rest and digitalis in large enough doses, *i. e.*, 22.5 cc. of the tincture to a man weighing 150 pounds, is quite a specific for these irregularities with pulse deficits.

CHEMICAL AND MICROSCOPICAL DIAGNOSIS FOR THE GENERAL PRACTITIONER.

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Pawnee, Okla.

Far be it from me, to offer myself as a judge of just what laboratory work each general practitioner will be able to do; but being familiar with the work done around a clinical laboratory and having recently been in general practice, I will attempt to give the tests and interpretations that I have found most useful in general work. The function of the laboratory is not to make a diagnosis but to assist the physician in doing so. To be of most use the laboratory findings should be correlated with the physical findings and clinical symptoms.

We have attempted in this paper to condense enough material for a text book into a few thousand words. No doubt this will be A. B. C.s to many of you, but some who graduated a few years ago were not so fortunate in receiving this training. Therefore, the purpose of this paper is to call attention to some of the tests that are found most useful and easily done in the office.

We will discuss only blood, urine, sputum, gonorrheal smears and diphtheria cultures.

BLOOD.

In the routine examination of blood, it is advisable to determine the percentage of hemoglobin, the number of red cells, the hemoglobin index and the number and kinds of white blood cells present. When occasion demands, we may test for malaria, typhoid, and syphilis.

Theoretically, the hemoglobin content of normal blood is taken at 100%, but ac-

cording to the arbitrary standards now in use, it is considered normal if it ranges anywhere from 80% to 100%. The normal number of red cells varies from four and one-half to five and one-half million; the lower figures being found in women and children and the higher in men. The above relation between the percentage of hemoglobin and the number of red blood cells gives a hemoglobin index of one or slightly less.

ANEMIA.

The two primary anemias, chlorosis and pernicious anemia, stand at the two extremes of the scale. Chlorosis gives a marked reduction of hemoglobin with slight reduction in number of red blood cells, with prominence of cacrocytes and normoblasts. Pernicious anemia, shows marked reduction of red blood cells, with relatively high hemoglobin, and prominence of paikilocytes, macrocytes, and megoloblasts; together with anisocytosis, polychromatophilia.

There is a graduation in the other anemias from the blood picture of chlorosis to that of pernicious anemia, in the following order: (1) Chlorosis, (2) Anemia due to poor hygienic condition, (3) Due to constitutional diseases, (4) To certain poisons as lead and arsenic, (5) Secondary to tumors, (6) Secondary to intestinal parasites, (7) Pernicious anemia.

The following table taken from Stitt, gives the normal number and kinds of white blood cells present.

Polymorphonuclears, 65 to 70% or about 5000 cu. mm.

Small lymphocytes, 20 to 30% or about 1500 per cu. mm.

Large lymphocytes, 2 to 6% or about 200 per cu. mm.

Large mononuclears, 1 to 2% or about 100 per cu. mm.

Transitionals, 2 to 4% or about 200 per cu. mm.

Eosinophiles, 1 to 2% or about 100 per cu. mm.

The number and proportions may vary in health to a greater or less extent. The value of a white blood count lies in knowing wherein the leucocytes vary from the normal in number and proportion.

Leucopenia is a term used to designate a fewer number of white blood cells than normal. The presence of 5000 leucocytes would indicate a slight leucopenia, while the presence of only 2000 would constitute a marked leucopenia. A leucopenia may

be produced by the following diseases: (1) Typhoid fever, (2) Influenza, (3) Uncomplicated pulmonary tuberculosis, (4) Malaria, (5) Exophthalmic goiter, (6) shock, (7) Measles, show a marked reduction of leucocytes in the early stages, (8) Chronic alcoholism, which is now of only historic interest.

Lymphocytosis is a term used to designate an increased number of lymphocytes. The condition in which lymphocytosis may occur are normally in children, pathologically in: (1) Hereditary syphilis, (2) Enlarged tonsils, occasionally, (3) Rickets, (4) Pellagra, (5) Measles, (6) Mumps, (7) Uncomplicated T. B. except T. B. of serous membranes, (8) Typhoid. Frequently lymphocytosis and leucopenia go hand in hand.

Leucocytosis is a term used to designate a greater number of white blood cells than normal. The chief diseases that produce marked leucocytosis, are: (1) Cholera, (2) Scarlet fever, (3) Pustular stage of smallpox, (4) Erysipelas, (5) Diphtheria, (6) Pneumonia, (7) Articular rheumatism, (8) T. B. of serous membranes, (9) Suppurations that are not well walled off, (10) Hemorrhage, at first causing a leucopenia, but with a marked leucocytosis following in a few minutes. (Crile J. A. M. A., Jan. 15, 1921.) (11) Malignant growths, fifty per cent of the cases, (12) Drugs, such as chloroform, ether, salicylates, and quinine.

Eosinophilia means an increased proportion of the eosinophiles. This condition is sometimes found in cases afflicted with: (1) Intestinal parasites, (2) Bronchial asthma, (3) Eczema, (4) Psoriasis, (5) Scabies, (6) Scarlet fever.

Differential Diagnosis—We may have difficulty at times in differentiating scarlet fever and measles from the clinical symptoms alone, but a blood count will easily tell the difference, as measles will produce a leucopenia with a lymphocytosis, while scarlet fever will produce a leucocytosis with possibly an eosinophilia.

Pertussis, in the early stages or atypical cases, may be differentiated from a common cold or bronchitis by a blood count, as pertussis will give a very marked leucocytosis (25,000 to 50,000), with a predominance of lymphocytes, while a cold will give practically a normal count.

A blood count may be of service in differentiating shock and hemorrhage. The latter producing a marked leucocytosis, while the former usually produce a leucopenia.

However, since many cases of shock are accompanied by some trauma, there may be a slight leucocytosis.

Sterile pus and the debris from a cold abscess will not produce a leucocytosis.

Sepsis may be differentiated from miliary T. B. and typhoid in that the two latter produce a leucopenia and a lymphocytosis, while the former usually produces a high count with a predominance of polymorphonuclears; even though the count should be low in sepsis, the differential will show a big percentage polymorphonuclear.

Prognosis—There is no relation between the number of leucocytes and the amount of pus present, as in the beginning of a septic infection the body may react well and produce a larger number of leucocytes, while there is yet a small amount of pus, while later in the disease, when a great amount of pus is present, the reaction of the body may be reduced and only a small number of leucocytes present.

The reaction of the body to injury of septic infection is in direct proportion to the number of leucocytes present, while the severity of the injury or virulence of the infection is in direct proportion to the percentage of polymorphonuclears present.

The resistance of the patient then may be said to be a ratio between the number of leucocytes present and the percentage of polymorphonuclears.

Gipson's chart illustrates this very nicely:

Number of Leucocytes	Percentage of Polymorphonuclears
35,000	95.
30,000	90.
25,000	85.
20,000	80.
15,000	75.
10,000	70.
5,000	65.

As long as a line connecting the points representing the number of leucocytes on the left and percentage of polynuclears on the right runs horizontal or with a slightly downward slope the prognosis is said to be good.

When the line slopes upward to the right, the condition is more unfavorable, and the steeper the slope the graver the prognosis.

As a word of caution, a negative blood count must not be taken at its face value when the clinical symptoms denote otherwise. To illustrate: A short time ago we brought a patient to the University Hos-

pital with the clinical symptoms of appendicitis. The blood count was normal, yet the appendix was gangrenous. Dr. Langston says that a normal leucocyte count is the usual early finding in cases of gangrenous appendicitis, the count rising as absorption takes place.

The Wasserman—Occasion frequently arises to test the blood for syphilis. This is done by means of the Wasserman test, which is too difficult for the general practitioner to make; but judging from the number of specimens that reach the laboratory in a useless condition, it will not be out of place to say a few words about the proper care of the specimens. If the blood is drawn in a vacuum tube the only precaution necessary is to put it on ice until mailed, being sure to use a special delivery stamp, that it may reach the laboratory in the shortest possible time, where it will again be put on ice. If a vacuum tube is not at hand, use either a dry sterile syringe and container, or see that they are properly sterilized and rinsed with sterile normal saline; otherwise hemolysis will take place. If it takes the specimen over twenty-four hours to reach the laboratory, it is well to let the blood clot, when the serum may be removed and sent without danger of hemolysis.

URINE.

Aurinalysis half made is a dangerous procedure. Yet it is a deplorable fact that many of us will test for reaction, specific gravity, albumin, and sugar, and finding nothing wrong will declare the urinalysis negative. This conclusion may be right or it may be very erroneous, as many cases of nephritis will show an albumin-free urine.

In a routine urinalysis observations and tests should be made to determine: Color, odor, specific gravity, reaction, glucose, albumin, indican, and acetone, while the microscopic examination may reveal red blood cells, pus cells, epithelial cells, crystals and casts of various kinds.

A normal urine is transparent, acid in reaction, of a pale yellow color, has an aromatic odor, and a specific gravity of 1012-1025. To be of the most value the specific gravity should be made on the twenty-four hour specimen. In disease it varies from 1.002 to 1.060. The low gravities are seen in diabetes insipidus, hysteria and chronic interstitial nephritis; however, the specific gravity of urine from a normal person may be quite low for a few hours at a time. High gravities are seen

as a rule after operations, hemorrhages and excessive perspirations. The very high gravities are usually due to sugar in the urine, although there may be a moderate amount of sugar in the urine when the specific gravity is only 1.010 to 1.025, and for that reason we should not let the specific gravity determine whether or not a test for sugar should be made.

Diabetes—Glycosuria may be classified as follows: (1) Alimentary glycosuria, depending upon the sudden concentration of the dextrose of the blood above the normal renal threshold, by the ingestion of large quantities of soluble carbohydrates. Magnus-Levy says this does not happen after the administration of starch, as in this case no more sugar is absorbed than can be metabolized in the body. (2) Renal glycosuria, depending upon lowering the renal threshold below normal. (3) Glycosuria due to disturbances of the endocrine system, particularly diabetes Mellitus.

Alimentary glycosuria may be distinguished by giving 100 grams of sugar on an empty stomach to a person whose urine has previously been made sugar-free by fasting. The urine of a healthy person will remain free while the diabetic will show a marked glycosuria in two or three hours. Diabetics may be classified as: (1) Severe, if sugar tolerance is below 10 grams; (2) Moderate, if from 10 to 50 grams; (3) Mild, if 50 grams or more can be tolerated.

A diabetic urine is usually pale, transparent, and acid in reaction. Acetone is sometimes present. The urine may be passed in large quantities, sometimes as much as fifteen or twenty quarts in 24 hours. In the lighter cases the sugar may appear only at stated intervals during the twenty-four hours, and for that reason when diabetes is suspected, a 24-hour specimen should be tested. Not only may the urine be free of sugar for several hours during the day, but it may be free for several weeks, only to reappear upon some slight indiscretion of diet, or some sudden nervous shock.

Glycosuria must be distinguished from lactosuria, for the latter is found in about 20% of nursing mothers, and in about 80% of mothers who do not nurse their children. This condition does not constitute a diabetes. To differentiate lactosuria from glycosuria, the fermentation test is most useful, as lactose is not broken up by the yeast within the first 24 hours.

Nephritis—Hyaline casts and albumin may be found in the urine temporarily in

the following conditions, without sufficient change in the kidney to be classed as a true nephritis, viz: After anesthesia, after physical or mental strain, in severe anemias, in chronic congestion of the kidneys, in diabetes, and in febrile diseases. Nevertheless, the presence of hyaline casts and albumin in the urine, continued over a period of time generally means a chronic nephritis. The amount of albumin and the number of casts is a good index to the severity of the disease. Casts and albumin are not always found together. But the presence of either may indicate a definite renal lesion. Just as the presence of hyaline casts and albumin does not always mean a true nephritis, neither does their absence exclude its diagnosis. Granular casts on the other hand, always indicate the presence of a severe nephritis; while blood and pus casts are found only in grave conditions.

"It is probable that one of the earliest symptoms of chronic nephritis, coincident with the presence of nocturnal polyuria, is the inability of the kidney to concentrate the end products of metabolism in the urine, a fact manifested by the fixation of the specific gravity."—Langston.

Indican—The action of the intestinal bacteria, upon the proteids of the food, results in the formation of indol, which also may be formed by the putrefaction of proteids that goes on in the fluid of an empyema or the cavity of a gangrenous lung. It is absorbed into the blood as indol and after further oxidation is excreted by the kidneys as indican. Indican may be present in small quantities in the urine of healthy adults and in large quantities in the heavy meat eaters. It appears in increased quantities in any condition that permits an increased putrefaction in the intestines, therefore, it is found in abundance in the urine of patients suffering from intestinal obstruction. It is also increased in intestinal indigestion or "billiousness." It has been found experimentally that at least a part of the symptom complex of "billiousness" may be produced by giving small doses of indican to healthy persons.

Acetone—The presence of acetone in urine seems to depend on the lack of the body's ability to utilize carbohydrates. So long as the patient is able to oxidize a sufficient amount of carbohydrates to meet the bodily demands, the acetone is absent from the urine, but appears as soon as a sufficient amount of carbohydrates is not oxidized, and increases in direct proportion to this lack of ability to utilize carbohy-

drates, presumably from the faulty katabolism of fats. Not only will acetone appear when the patient is not able to utilize carbohydrates, but also when there are no carbohydrates to be utilized; thus we may find acetone in cases of starvation, lasting over three days, and in cases on carbohydrates—free diet in diabetes, the acetone will disappear in the latter condition when carbohydrates are added to the diet. Therefore, we find acetone present in severe diabetes, starvation, and many digestive disorders, febrile conditions especially in influenza and the exanthemata in children. It may also be present for a few days before and after delivery, and after ether and chloroform narcosis.

BACTERIAL EXAMINATIONS.

A knowledge of bacteriology often saves a great deal of suffering and frequently a life. The general practitioner will find ninety percent of his bacterial work will be covered by three tests, viz: Examination of sputum for T. B., urethral and cervical smears for gonococcus, and throat cultures for diphtheria.

Sputum—"Pulmonary tuberculosis has no characteristic sputum." In the incipient stages there may be little or none, but as the disease progresses, with few exceptions, the amount of sputum increases. With our present methods, a diagnosis of tuberculosis can usually be made long before tubercle bacilli can be found in the sputum. Consequently one or even several negative examinations mean nothing. A positive finding, however, is conclusive proof that the disease exists. We are prone to make a diagnosis of advanced tuberculosis from the symptoms and physical findings without examination of the sputum. "It is because of this neglect that many cases of bronchiectasis, pneumoconiosis, chronic empyema, and even chronic cardiorenal diseases, are mistaken for tuberculosis."

Cervical and Urethral Smears—Not all purulent cervical and urethral discharges are due to gonococcus, therefore, a microscopical examination should be made, so that proper treatment may be instituted. A correct diagnosis in these cases will save the physician, as well as the patient, many an embarrassing situation. Just recently a married woman applied to me for treatment for a condition that she thought was gonorrhea. As she said her husband was the only possible source of infection, she was thinking seriously of a divorce. You may imagine her change in attitude when

the microscopic examination showed no gonococci but a germ that closely resembled the bacillus pyocyaneus. There being no sign of any infection in the husband, I believe that a lowered resistance allowed some of the normal vaginal flora to become pathogenic. Not only will the bacterial examination be of service in diagnosing these conditions, but it is almost indispensable in telling when a gonorrheal endocervicitis is free from gonococcus. A colleague once brought us a cervical smear from a woman who had been married three times and in each case had infected her husband. She was so sure that she was not the offending party that she offered herself for examination. The clinical symptoms and physical findings were negative but the cervical smear was positive. I take this opportunity to state that vaginal smears are never satisfactory.

Diphtheria—Before the days of antitoxin about 40% of the diphtheria cases proved fatal, but since the days of antitoxin the mortality has been reduced to less than ten percent, the prognosis depending upon the promptness with which a suitable dose of antitoxin is administered.

It is not practical to give antitoxin to every child with a spot on his tonsil. In fact, only a small percentage of these cases are diphtheria, and the administration of anti-toxin would be not only a needless expense but would possibly sensitize the patient to horse serum. When the child is seen early, before a clinical diagnosis of diphtheria can be made, a swab should be taken for diagnosis and the case treated as tonsillitis until proven otherwise. However, if the child is not seen early in the disease and a clinical diagnosis can be made, or even the case looks very suspicious, do not wait for a laboratory diagnosis, but give anti-toxin at once, and take a swab for confirmation of your diagnosis. A diphtheria membrane must have a beginning. When the membrane is small and on the tonsil, it cannot be differentiated from tonsillitis without a culture. It is not fair to the child to let the case run until a clinical diagnosis can be made, as many precious hours may thus be lost. When the laboratory is some distance away, the time required for a report makes its services impractical. Therefore, in order easily and successfully to handle the diagnosis, quarantine, and release of the quarantine on diphtheria cases, it is very convenient to be equipped for making cultures in your office. In doing this, we found our greatest difficulty in keeping fresh media, and ob-

taining a suitable incubator at moderate cost.

We prepare Dorsett's Egg Media, and use for heating in place of the inspissator, an electric sterilizer on low heat. Any method of heating may be used, providing the tubes are slanted and the heat sufficient to harden the media, without forming bubbles, which will happen if high heat is applied. If used fresh, no other sterilization is necessary, but if intended to be kept for any length of time, the tubes should be kept at a temperature of 75 degrees for one hour on three successive days.

For an incubator, an ordinary wooden box may be used. This is fitted with an electric light bulb and thermostat. To make and equip this incubator will cost less than \$3.50. Since a temperature ranging anywhere from 90 to 100 degrees F. is suitable for a diphtheria culture, the tube may be carried in the inside vest pocket for incubation. But when a suitable incubator can be constructed for the mere sum of \$3.50, you cannot afford to bother with it.

On account of the cumbersome nature of our State Laws, in regard to the release of diphtheria quarantine, you will find that comparatively few release cultures are made in the rural districts. The parents object to paying a physician for coming to see a child that appears to them perfectly well. There is an expense of twenty or twenty-five dollars, that seems to the hard-run farmer to be absolutely unnecessary. He thinks that the thirty-day quarantine which is required, when no cultures are taken, to be unjust; and the physician, knowing that in most cases the cultures are negative in about ten days after the throat is healed, releases the quarantine.

During the diphtheria epidemic of last winter, being county superintendent of health of Pawnee County, we volunteered to do the bacterial work for the physicians in our county. Several took advantage of the offer. We found in this work, and in our own cases, that it was no uncommon thing for a throat to be positive two weeks after it was apparently well. Bearing this in mind, we wish to urge that you follow the strict letter of the law in handling diphtheria cases. In justice to the public at large, you cannot do otherwise.

SUMMARY.

This paper deals only with the laboratory work that can be done in the office. It is a plea to the physician, not to cast aside one of his most useful means of diagnosis; but

where there exists a reasonable doubt, to make the necessary laboratory tests and correlate the results with his clinical symptoms and physical findings.

Disease of the red blood cells will produce anemia, grading from chlorosis to pernicious anemia.

Many diseases produce such changes in the leucocytes as to make them of unlimited value, in differential diagnosis.

A negative blood count must not be taken for its face value, when the clinical symptoms denote otherwise.

A partial urinalysis may be dangerous to the patient. Sugar in the urine should be identified. Glycosuria should be classified. Hyaline casts and albumin in the urine do not always mean a nephritis, unless extending over a period of time.

Indican assists in the diagnosis of intestinal indigestion.

Acetone in the urine depends upon the body's lack of ability to utilize carbohydrates, probably from the faulty katabolism of facts.

A negative examination of sputum for T. B. means nothing. A positive finding is conclusive proof that the disease exists.

A correct diagnosis on urethral and cervical smears will save a physician, as well as the patient, many an embarrassing situation.

Make cultures for diphtheria on your cases of tonsilitis; play fair with the children. Do not needlessly sensitize your patients against horse serum. If a clinical diagnosis can be made, do not wait for laboratory diagnosis. If you do not have access to a nearby laboratory make the cultures in your office. Be sure to make release cultures.

Discussion: WANN LANGSTON, M. D., Oklahoma City, Okla.

This is a timely paper; in this day when the pendulum has swung to the ultra-technical side of diagnosis and a reaction has set in and there is danger of going to the other extreme in emphasizing clinical diagnosis to the exclusion of the laboratory, it is well to pause and consider the vast importance of careful scientific investigation and conservative interpretation of valuable laboratory procedures.

Many of the procedures the doctor has called to your attention are well-nigh indispensable to the scientific practice of medicine. It is doubtful if there is a single diagnostic method that gives more valu-

able information than a careful examination of the blood. It is pathognomonic in perhaps as many instances as is any procedure. For example, in malaria, the leukemias, etc. It is the main differential method in others, as splenic anemia, primary anemias from certain secondary ones, etc.

It is such a simple matter that it is surprising that it should be neglected. A few minutes study of a properly made blood smear, without any other examination, may yield information of vast importance.

A word of caution is necessary here. It is a dangerous thing to accept a negative blood finding at face value when the clinical findings point to pathology. The blood is extremely sensitive to various changes within the organism, but it is not absolutely infallible. Normal blood count in some cases of acute appendicitis is an example.

Caution No. 2. To make a white blood count without a careful differential study is always contra-indicated. It is the relative numbers of the various type of cells that is important, rather than the absolute normal.

A word about the examination of the urine. To examine for alubumin and tell the patient he has no albumin, therefore his kidneys are sound, is very hazardous. The absence of albumin and casts from the urine is of relatively small value. There may be severe pathology without finding either at any given period. The ability of the kidney to concentrate is the prime consideration. This is determined easily by taking the specific gravity frequently under varying conditions. A fixation of specific gravity at a low level is an important diagnostic point.

I would emphasize one other point in the doctor's paper, with reference to the examination of smears for gonococci. Vaginal smears nine times out of ten are absolutely unsatisfactory, and should never be made. After having cleaned the vulva, gentle massage of the vulvo-vaginal glands and of the urethra will frequently yield satisfactory material for examination. Then make an additional preparation from the cervix. These preparations can be satisfactorily studied, while those made from vaginal discharge are so contaminated that it is most often impossible to form an opinion.

In conclusion, I would add that laboratory methods form an important diagnostic procedure that should not be neglected. These should not be depended upon to make

a diagnosis, to the exclusion of other methods, and then condemned in case of failure; but the symptoms elicited by this means must be properly interpreted and evaluated along with the other symptoms in making a diagnosis.

Discussion: J. A. RODDY, M. D., Oklahoma City, Okla.

During 15 years of practice, spending half my time in clinical work and the other half in laboratory work related thereto, I have listened to many papers on the same subject as the one we have just heard, and in my humble opinion Dr. Gastineau's paper is by far the best I know of. It is easy to think of and offer suggestions for slight alterations that might enhance it, but such a gem had better be accepted as is rather than risk marring it. I feel sure the copy of the State Journal containing this monograph will be a valuable addition to our desks, often turned to with pleasure and profit.

IMPORTANT FACTORS IN KIDNEY SURGERY.

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Successful kidney surgery depends upon early diagnosis and preliminary treatment. The practitioner must recognize certain significant symptoms and the specialist must locate the cause.

Pus, blood, pain, bladder irritability and abdominal masses call for prompt and scientific investigation.

Several years ago at Barnes Hospital, three hundred cases of kidney infection were analyzed and only 9% were admitted with positive diagnosis, though 100% had definite evidence of kidney infection. This type of kidney infection gives the highest mortality, whereas, with early diagnosis and preliminary treatment mortality in three hundred kidney operations is as low as .3 of 1%.

Urinalysis is the first important step in early diagnosis of kidney lesions. Pus in the urine is never normal. Investigation of the so-called "few pus cells" may be an early T. B., pyelonephritis or stone. Blood in the urine should always be given prompt consideration and investigation, as T. B. tumor and stone are the most frequent and

common causes for its production. Pain, whether it be abdominal pain or definite kidney pain with its associated muscle spasm and sensitiveness calls for a most rigid investigation.

Bladder irritability should always have the upper urinary tract excluded as the original source of the infection unless definite pathology in the bladder accounts for the symptoms. Apply the Golden Rule in this type of case. All cases of cystitis that do not respond in two weeks to appropriate bladder therapy should have the kidneys investigated.

In over one hundred cases of T. B. of the kidney, bladder symptoms were treated over a period of three and one-half years and both kidneys were involved in 29% of the cases.

Abdominal masses that are not definite in their origin should receive most careful diagnostic investigation to exclude kidney.

All or one of these symptoms, pain, pus, blood, bladder irritability and abdominal masses may be present in a given case and the degree of manifestation small or great, but careful and diligent search must be instituted in all.

The cystoscope, ureteral catheter and x-ray, with the aid of the phenolsulphonphthalein functional test, pyelographic studies and blood chemistry are the means at our hand to fathom the symptoms just enumerated. We see then, that the first important step in successful kidney surgery is early diagnosis firmly and conclusively established by the methods already mentioned.

The second important step is the preliminary treatment necessary to bring the patient up to the highest degree of safety when surgery is done.

I will not discuss the usual routine methods employed in all cases as to condition of the heart, blood, etc., but will confine my remarks to the points of interest to be noted in checking up the blood chemistry, particularly the blood nitrogen, the improvement of kidney function, drainage of kidney both by surgery and ureter catheter and the restoration of the patient's resistive power.

Let us mention a few cases where the preliminary steps for safe kidney surgery are all important. Acute pyogenic infections of the kidney, especially in children, where nephrectomy is indicated and where they are acutely sick and septic should have the benefit of preliminary drainage, either by ureter catheter or nephrostomy

with a secondary nephrectomy, for by so doing a general, and as a rule, a marked improvement is noted in their condition, blood chemistry and renal function. It allows the good kidney to accommodate itself to its compensatory duties and rid itself of toxins, gives time for blood transfusion where indicated, sepsis is greatly reduced, patient's resistive power enhanced and major surgery made safer.

Acutely blocked kidneys with associated infection and hydronephrosis are put in shape for surgery by ureter catheter drainage and lavage.

Cases of chronic pyelonephritis necessitating removal of kidney are made much safer risks by preliminary drainage per ureter catheter.

In patients with only one kidney, where calculi are present and acute retention in the pelvis with infection suddenly develops, preliminary ureter catheter drainage turns a hopeless case of surgery into a fair risk.

In the case of long standing kidney infection, where the diseased kidney is irreparably damaged and the good kidney is secondarily infected, ureter catheter drainage and lavage paves the way for safe surgery.

In bilateral surgical conditions of the kidney, such as stones, where nephrectomy is indicated in one kidney and drainage in the other, the good kidney should be operated upon first. This gives the patient the benefit of what little function may be left in the destroyed kidney and guards against a sudden blockage of urine in the good kidney.

The importance of ureter catheter drainage with consequent relief of retention and infection in some kidney infections that look surgical, but which are transformed into non-surgical cases, as evidenced by pick-up in function, restoration of blood chemistry within normal limits, reduction in retention and infection and freedom from local disturbances. It is really remarkable to see the comeback in some of the badly damaged kidneys under intensified ureter catheter drainage.

The importance of transfusion in patients suffering from anemia, both pernicious and secondary toxic anemia prior to surgery, must be remembered.

In cases of stone in the kidney associated with infection and retention much better surgery is accomplished if preliminary ureter catheter drainage is instituted. Freedom from retention and infection offers stronger union and less danger of

fistula in pyelotomy and nephrotomy.

In cases of unilateral kidney infection where surgery is indicated, preliminary catheter drainage will lessen the chances of a secondarily infected sound kidney and materially enhance the patient's general condition and promote better healing of the wound.

Careful search for absence of one kidney and congenital malformations of the kidney is important before any surgery is done.

Should any surgery suddenly arise in the pregnant woman and pyelitis develop or is already present as an added complication, ureter catheter drainage as a preliminary measure is of inestimable value. It may tide the woman through her pregnancy and in any event it will make surgery safer.

In uremia associated with an acutely blocked kidney other means beside drainage must be promptly instituted. Hypodermoclysis, proctoclysis of 4% soda, forced fluids and free elimination is important. Twenty-four hour summary of intake and output is very essential. In desperate cases we have seen excellent results come from blood letting with the re-introduction of 10% glucose into the blood stream. Acidosis must be carefully and promptly treated by alkalies and glucose intravenously.

To illustrate the points just mentioned I will cite a recent case in brief.

A patient entered the hospital with an acute block of the left kidney. A large sensitive mass was seen to occupy the kidney region with such prominent bulging in the left posterior flank that peri-nephritic abscess was to be considered. Temperature 101, blood count 17,500 and blood nitrogen 165. Patient was very uremic and attending doctor stated that only three ounces of urine had passed in the last 48 hours. Abdomen was tremendously distended and patient was very toxic. Catheter was passed to exclude bladder retention and one ounce was obtained. Urinalysis showed r. b. c., pus and colon bacilli. Cystoscopy was done and the following noted: No ingrowth of prostate, no stone, tumor, ulcer or diverticulum. Right ureteral orifice gave evidence of an old lesion with destruction of the kidney. It was scarred and puckered with fibrin deposit clinging to edges. No urine could be seen ejaculating. It was impermeable to catheter. Probably an old auto-nephrectomized kidney. Left orifice was puffed and edematous. Catheter passed and met a tempor-

ary obstruction about one inch beyond bladder, then passed to kidney. Twelve ounces of retention was noted. Supernatant fluid was clear, then came residue of dirty urine. Catheter was left in place for continuous drainage. Forced fluids, hypodermoclysis, rectal tap, 4% soda and free elimination was ordered. Summary of intake and output was carefully checked for 24 hour periods. Uremia was so pronounced 500 cc. of blood was withdrawn and a like amount of 10% glucose injected. The immediate improvement of this case was remarkable. Nitrogen in 24 hours dropped to 67, nearly 100 points, and urinary output was 1200 cc's for 24 hours. Ureter catheter was changed in a few days and patient radiographed. Plate was suspicious of a calculus shadow in lower ureter about one inch above bladder.

PSP appeared in 8 minutes and totaled 40% in one hour from left kidney and bladder. At a later date, hydronephrosis and hydro-ureter were demonstrated by pyelographic study, as was the calculus in the ureter. Stone was removed by intravesical manipulation. Points of interest in the case were the following:

1. Having definite knowledge that the blocked kidney was the good kidney and the only one of service.

2. Sudden drop in blood nitrogen instead of a gradual decline,—a good differential point between an acute and chronic infection.

3. Low leucocyte count which is the rule in kidney infection rather than a high count which points to a perinephritis.

4. Practical demonstration of the pelvic retention with its perfectly clear supernatant fluid, followed by dirty urine when the bottom of the hydronephrotic sac was reached.

5. Value of ureter catheter drainage, x-ray, pyelographic study and P. S. P. in both diagnosis and preparation of patient for any surgical intervention, minor or major.

ANESTHESIA.

Gas and oxygen is the best anesthetic. No renal irritation occurs and lung irritation is reduced. This is important as nephrectomy for T. B. occurs in about 30% of the cases. A little ether can be used in some cases to give primary relaxation.

POSITION OF PATIENT AND INCISION.

Best position is lateral one. Patient's arm and leg on the side of operation are

extended. Patient is elevated at the break of the rib with the under arm through to the front, rather than back of him. Incision is made from below 12th rib obliquely downward and forward between the rib and crest of the ileum, keeping away from crest of ileum and nearer the rib margin. Avoidance of the 12th dorsal, ileo-inguinal and ileo-hypogastric nerves is important. Severance of the costo-vertebral ligament to mobilize the rib with extension of the incision downward and forward will give freer access to the kidney and in nearly all cases resections of the rib will not be necessary nor will heavy retraction. Any injury to pleura should be repaired at once.

IMPORTANT STEPS IN VARIOUS PROCEDURES.

Tugging on kidney pedicle is to be avoided as it is conducive to shock. Aberrant vessels should be carefully searched for. Should the peritoneum be opened it should be promptly sutured. In nephrectomy, it is best to free ureter, ligate it and cauterize. Vessels should be clamped en masse with large curved kidney clamps. Kidney should be relaxed so the vessels are put on tension and the kidney cut far enough away from the clamp so that the tip of the vessels are in sight. Transfixing the pedicle between vessels with figure-of-eight stitch on needle and tying the vessels individually fortifies admirably against hemorrhage. When kidney is to be nephrotomized it should be opened with a blunt instrument. We use a large liver needle threaded with silver wire. Needle is inserted into the part of kidney to be opened; capsule is cut between wire; and by sawing on the wire, kidney is opened from below upward and very little bleeding occurs. In case of pyelotomy, open the pelvis posteriorly thus avoiding pelvic vessels and keep away from urtero-pelvic juncture. After removal of stone pelvis should be irrigated, small probe passed down ureter to see that it is patent and walls carefully stitched. A flap of fatty capsule stretched over the line of incision prevents leakage and makes union stronger. In fixation of kidney, it is important to see that ureter is free of any kinks and no aberrant vessels are in the immediate neighborhood.

POST OPERATIVE TREATMENT.

Elimination is the chief object in kidney cases. One should always anticipate that uremia may occur and treat the case accordingly. Immediately after operation, hypodermoclysis, rectal tap 4% soda or glucose (the latter to combat acidosis)

should be instituted. Water by mouth increasing rapidly to force water as soon as nausea ceases is very important. By forced water is meant at least a glassful every hour or half hour if necessary. Skin should be kept warm in order to allow free skin excretion. Enemas should be given if the patient suffers from distention. Sedatives should be given to control pain when indicated. Food should be increased from liquids to solids after the bowels have moved. This keeps up their strength and protects them against acidosis and distention. Urinary antiseptics should be resumed by the second day if possible. Average length in bed is from 10 to 14 days, except in fixation of kidney, where three weeks in bed is considered necessary. If shock occurs hemorrhage and excessive mutilation are the important factors in its production. Hemorrhage is single, severe or fatal. Packing with gauze and hemostatics internally and intra-muscularly will usually control bleeding. Shock is treated by the ordinary standard methods familiar to you all.

HOME MANAGEMENT OF OCCIPITO-POSTERIOR POSITION.

C. V. RICE, M. D.,
Muskogee, Okla.

During the past few months the realization has again come to us that we are living in the most wonderful age the world has ever known—the age of the greatest advancement. In every vocation we have seen this and the desire to give to mankind the best for pleasure, comfort and betterment. In the practice of medicine and surgery we conscientiously do all we can to improve our methods and to alleviate unnecessary suffering; but has it occurred to you that we neglect the conditions that seem impossible to improve? Our hospitals are better each year and show the advancement made by our profession but unfortunately, we have patients who, for various reasons, cannot enjoy their advantages. We find this especially true in our obstetrical work where the home patient may not be necessarily prejudiced against the hospital but is financially unable to go there. Then we find its inconvenience in the rural locations and the rural doctor has practically all of his obstetrical cases in the home. The methods

we use in the hospital cannot be used in the home and when we know that 80% of obstetrical work is there and a large per cent will continue to be for a long time, we should realize that management of these cases deserves more thought.

Nothing taxes the doctor so much as a long, tedious labor in the home and the occipitoposterior position, as a rule, is a long and tedious one. The causes of this condition vary, but perhaps the most plausible ones are weak, feeble, irregular uterine pains and a damaged pelvic floor. The feeble pains lack the force to cause flexion of the head and the impaired levator ani fails to push the occiput to the front. Other causes may be a large foetal head, pendulous abdomen, slight contraction of the pelvic brim or any obstruction of the parturient canal that will involuntarily prevent rotation.

The diagnosis of this condition, in the majority of cases, is not so easily made as our text-book informs us, and we have all had the experience of not recognizing the position before the head emerged. We cannot always tell by the abdominal palpation. With some abdomens we can feel every part of the foetus and outline it perfectly. These cases have a relaxed abdominal wall and very little amniotic fluid; but in the primipara we usually find a rigid abdomen which makes a positive diagnosis almost impossible by palpation alone and here we find it very hard indeed to outline the foetus and to distinguish a post from an anterior position. We are told that on palpating the abdomen we can outline the back in the right or left flank, the breach in the fundus, the head at the brim and the fingers dip in the hollow between the breech and head, where the limbs are felt around the umbilicus. This may be accomplished with a relaxed, thin abdomen, but it is quite impossible with one that is tense and rigid.

The foetal heart tones do not aid us to any great extent, for with the rigid abdomen we can hear the heart tones about as well in one abdominal position as another; in fact, we might say it acts as a sounding board. The only positive way to make a diagnosis of this condition is to get a complete dilation and make an internal examination, locating the ear and if we find it pointing to the mother's back we are sure of our diagnosis.

The first suspicions we have of an occipitoposterior are a high head pressing against the pubic arch, weak, irregular pains and slow dilation, so slow that there

seems to be no progress in labor. On making a rectal or a vaginal examination, we will find the head crowded to the front against the pubic arch and a large space between the head and the sacrum. When you suspect the occipitoposterior position, tell the family that you may have a long, tedious labor and do not be influenced by the anxious members. Remember that it is more to your credit to have a 48-hour labor with a live baby and a mother in good condition than a 16-hour labor with interference, a dead baby and a mother badly lacerated or infected.

How are we to handle these home occipitoposterior cases? First, we are to avoid infection by making rectal examinations. It is necessary to make a vaginal examination when we are not sure of our rectal findings and when the cervix is completely effaced and thin, we have the touch of complete dilation on vaginal examination or we find a dilation of only four or five cm. If it is necessary to make a vaginal examination, use 3½% iodine to the vulva and perineum and as a lubricant for the sterile glove. "Johnson & Johnson," or as it is better known by its trade name, "Synol Soap," is used. This acts in two ways: first, by its antiseptic action; second, by its lubrication. It gives the most excellent results and is one of the necessities of the obstetrical bag.

We must not forget the importance of watchful waiting at this time. This is harder in the home than in the hospital, as the family will interfere there more. They want you to terminate the suffering even to operative procedure, and that is one reason the mortality is lower in the well-regulated hospitals than in the homes.

While waiting for dilation with these suspected occipitoposterior cases, we must save the patient's strength. She should not bear down with her pains until there is a complete dilation, as it will not only exhaust her but will bring about a relaxation and elongation of the uterine ligaments, causing a prolapse in later life.

Morphine and scopolamine are used at this time to prevent exhaustion of mother and child. I have been using pavon with scopolamine and like it much better than the morphine and scopolamine, as I have been able to use it over a longer period of time in resting my patients. It has had no bad effect to mother nor child. By its sedative, analgesic and antispasmodic action, we overcome the danger of a contracted ring in these long, tedious cases, and as yet I have never had a blue baby

from its use, as with morphine and scopolamine. This is due to the fact that pavon in therapeutic doses scarcely affects the respiratory and circulatory centers.

There is no cause for alarm after our patient has been in labor eighteen or twenty hours without much or any progress if we have been saving her strength and taking foetal heart tones. Bear in mind that 90% will rotate anteriorly if they are given time and that three out of every four of the remaining 10% will be born spontaneously with the face toward the symphysis and this leaves a small per cent for operative interference. If we do not have complete dilation by the time of the average duration of labor, the use of a bag is advised. If we have to send out for a bag we can, while waiting, pack the lower segment of the uterus and cervix with gauze. This can be done with little discomfort to the patient and is very helpful toward end results so much so that it is sometimes found unnecessary to use the bag. After we have complete dilation and expulsion of the bag, we are justified in waiting four hours before interference, or of making a positive diagnosis by getting the position of the ear. Up until this time our diagnosis is probable and not positive.

We now place the patient on a kitchen table in a good light and use 3½% iodine on the abdomen from the umbilicus down over the vulva and on the inner side of the thigh from the knees down. Our patient is then anesthetized. As a rule, in the home, city or country, we do not have a sterile gown. We scrub up and if we have no long sleeve glove we paint the forearm that is to be used with 3½% iodine from the elbow down to the wrist, put on sterile gloves and place a rubber band around the wrist. The glove is then lubricated with Synol Liquid Soap and we are now ready for the invasion of the parturient canal.

The treatment will depend upon the station of the head, the constitutional symptoms of the mother or distress signs of the child. When the ear is located and the diagnosis is made of a persistent occipitoposterior and the head is found on the pelvic floor, the forceps are applied. Traction is made in a horizontal plane until the forehead comes behind the pubis. The handles are now raised toward the pubis and the occiput is delivered over the perineum and then the brow and face come from under the pubis. It is necessary, even in the home, to do an episiotomy, especially if the patient is a primiparae. By so do-

ing, we can save an extensive laceration of the pelvic floor and sphincter.

If the head is above the brim or in the midplain, the operation of choice in the home is one of version. There it would be very hard to rotate with the hand, apply forceps and try to engage the head, then to remove them and allow the patient to come from under the anesthetic and start in labor again for a couple of hours, and again to apply the forceps, making the delivery. The main objections to this for these difficult home deliveries are too many invasions of the parturient canal, which increase the danger of infection.

In doing podalic version our greatest mistakes are too much haste and not enough deliberation, and not figuring out the various steps in the operation before invading the uterus. If you lose your head you will make the operation harder than it really is. It would be well to Potterize and bring down both feet at one time and be sure to do the version slowly. In doing it rapidly we swing the arms up to the sides of the head and as it is very difficult to bring them down and deliver the after-coming head, we shall probably end with a dead baby. No doubt Potter's success in version is due to his coolness and deliberation.

In conclusion, I wish to report three cases of occipitoposterior position that singularly occurred while this paper was being prepared. One rotated anteriorly with time and the other two were unrecognized until the head came from under the pubis.

CASE 1: Mrs. H. G. S., age 25. Para 1. Went into labor April 1, 1922 at 11 P. M. Had weak, irregular pains which continued until April 3rd at 8 P. M. At this time I made an internal examination and found the cervix effaced and very thin, dilation 4 cm., and the head high and pressed against the pubis, leaving a space between it and the sacrum. With the external findings I made a probable diagnosis of right occipitoposterior position, inserted a large bag at 8:30 P. M., which was expelled with slight traction on the morning of April 4th at 2 A. M. I made a rectal and found the head still high and in the same position and felt sure that this would be an operative case but decided to wait until daylight. At 4 A. M. was called and found bulging; at 4:30 A. M. she delivered normally and spontaneously, a 9½ pound baby girl. This patient was in labor from April 1, 11 P. M., until April 4th, at 4:30 A. M. During this time she was given four ampules of pavon with scopolamine and

two independent doses of scopolamine gr. 1/200 each. During this long and tedious labor only two internal examinations were made, the patient showed no signs of exhaustion and made an uneventful recovery.

CASE 2: Mrs. H., age 20. Para 2. Past history: First delivery in 1920. Was in labor about seven hours when forceps were applied, resulting in a deep laceration and the baby dying with convulsions on the second day. Indications for forceps, unable to obtain.

Present delivery: Patient went in labor April 10th, at 9 P. M. Was called at 11 P. M. and found the patient having hard pains. A cystole and rectocele became so prominent I thought there was a bulging. On making a rectal the head was found in midplain and there was nearly a complete dilation. I made my set-up, gave five min. of pituitrin and in a few minutes the head was on the perineum. The first suspicion of an occipitoposterior position was when I saw the head trying to rotate. The baby was delivered with the face toward the pubis. This O. P., no doubt, was due to the laceration of the vaginal tract and pelvic floor from the first delivery.

CASE 3: Mrs. O., age 24. Para 2. Past history: First delivery in 1920, normal labor of average duration and spontaneous delivery.

Present delivery: Went into labor April 20th at 10 P. M. On April 21st, at 7 A. M., she had severe pains with flattening of perineum, which suggested rapid progress. On making rectal examination, found cervix effaced with a touch of complete dilation and the head in midplain. Took patient to birth room; no progress was made and on internal examination found cervix very thin and a dilation of only four cm. Inserted a large bag and took the patient to her room. Was called at 1 P. M., found bag being expelled and the head followed immediately with the face toward the pubis. The baby was in good condition and the puerperium satisfactory.

Discussion: H. M. WILLIAMS, M. D., Oklahoma City, Okla.

In presenting the subject of occipitoposterior, the management and care of in the home is one that interests most every physician engaged in the practice of medicine, as there are few doctors who do not at some time during his practice meet with this abnormal position. Only about 2% occur in this position, but at some time we are sure to meet our percent of these cases.

I am glad to note that in his paper the doctor has made special emphasis upon two of the most important phases of this subject. That is, first, diagnosis. Second, watchful waiting.

The first, however, is not at all times an easy matter to do, as the text-books and authorities would lead us to believe. It is, though, very important because after the physician has once made his diagnosis he will be able to manage the case accordingly.

We find that in our experience to make a diagnosis before dilation has taken place and the head is well down is a difficult thing to do.

After our diagnosis is completed and we find that our position is an occipitoposterior we proceed to follow the plan of watchful waiting which the doctor has so well emphasized. Not infrequently in this type of case the patient suffers permanent injury, the child has been sacrificed because this plan was not followed.

The free use of opiates should be resorted to and if possible the physician should absent himself by getting busy on some other case, as the anxious friends, unless he be a man of firm will, may endeavor to have him bring about labor by mechanical means before the time indicated.

If, after watchful waiting, in due time no progress is made and the head is not engaged in the superior straight, I endeavor under anesthesia to rotate by the use of the hand. After the head is engaged or low down we endeavor to apply forceps and to rotate if possible by this means. If unable to rotate to an occipitoposterior, than by means of forceps to bring the head well down upon the pelvic floor and after complete flexion remove the forceps. Follow again the watchful waiting which in most cases will result in expulsion of the child, which will cause less traumatic injury to the mother and the child if the forceps were not removed at this junction.

Discussion: W. A. FOWLER, M. D., Oklahoma City, Okla.

I have such a high regard for Dr. Rice's ability as an obstetrician that I regret to take a position in opposition to him in any important respect. However, when he recommends the delivery of posterior cases as such without rotation, I shall have to absolutely and unqualifiedly disagree with him on this point. With the whole hand in the vagina in cases after engagement, the head can easily be rotated to anterior, and

one blade of the forceps introduced before removing the hand in order to maintain rotation. About one-half inch in diameter is saved by delivering in this position, thus lessening the danger of injury to the baby's head or the soft parts of the mother.

As Dr. Rice stated, however, the percentage of cases in which he recommended this treatment is very small. The paper in every other respect is excellent. He rightly lays great emphasis upon the importance of conserving the patient's strength by rest, nourishment, the relief of pain and the avoidance of bearing-down efforts in the first stage. Light nourishment should be given every four hours in the first stage.

Vaginal examinations are usually unnecessary and should be avoided as far as possible. Manual dilation of the cervix and manual rotation of the head in the first stage are usually unnecessary and pernicious procedures.

CLOSING.

This paper was written with the thought of helping those doing home obstetrics and rural practice and I am sure that if Dr. Fowler has done country obstetrics here, he will not advise the untrained man with no assistance but that of neighbors, to place his whole hand in the vagina and rotate the head. It would be the proper thing to do in proper surroundings with the right help, but I feel that in the rural home in this particular country it would be very dangerous, and I speak from practical experience in rural work. There is no question but that it takes more courage for watchful waiting than interference, but I am sure that the end results to mother and child will be much better. By well watching the patient's strength and giving her rest periods, the head will most probably rotate. If it does not, in the majority of cases, the head will be born spontaneously in the O. P. with no harm to mother nor child. Then you will say that courage to wait has won out.

THE USE OF HYPERTONIC SALT SOLUTION IN TREATING ENCEPHALITIS LETHARGICA.

HALITIS LETHARGICA.

W. W. RUCKS, M. D.

This patient, a married man, 33 years old, was admitted to the hospital on May 29, 1922, with a history of having become ill a few days prior to his admission with a feeling of malaise, headache, and fever. The fever gradually came on, reaching a slightly higher period each day. Typhoid

fever was suspected. Two days prior to his admission he was very nervous and restless, complaining of intense headache and double vision. Suddenly he was seized with a general convulsion. Following this, he was delirious, maniacally inclined, so much so that he could not be kept at home. On the day of his admission to the hospital, he had two convulsions, and was so maniacal that it required two nurses to hold him in bed. His temperature at that time was 103. Blood count done on the day of admission showed 10,000 white cells with 86 percent polly. Widal was negative, also negative blood Wasserman. A spinal puncture done at that time resulted in obtaining a clear fluid under great pressure, with a cell count of 232. Negative globulin and Wasserman. This blood and spinal fluid finding, with the picture of an acute general infection involving the central nervous system, which was evidenced by diplopia, great restlessness, convulsions, and maniacal frenzy, enabled me to make a diagnosis of Encephalitis Lethargica, and to predict the lethargy which soon followed.

Knowing that the pathology consisted largely in an edema of the brain stem, and having recently familiarized myself with Harvey Cushing's use of hypertonic salt solution in syphilis of the nervous system, and his claim that edema of the brain is lessened and its actual size reduced by the injection of 100 cc. of a fifteen percent salt solution into the vein, I began its use. An injection of 100 cc. of a fifteen percent solution was given May 20th. He continued restless but had no further convulsions. On the 21st, it was repeated, following which he rested much more quietly. The next day he was drowsy and was soon in the typical somnolent stage. The hypertonic solution was continued for two more injections. Spinal puncture during this period showed a fluid under less pressure with the cell count decreasing. The somnolent stage in this case lasted a surprisingly short time but the ultimate recovery of the patient has not been satisfactory in that he was left mentally clouded, which condition has not yet cleared up.

CHATTANOOGA MEETING OF THE SOUTHERN MEDICAL ASSOCIATION.

The Southern Medical Association will hold its sixteenth annual meeting in its birth city—Chattanooga, Tennessee. "The Dynamo of Dixie," Monday, Tuesday, Wednesday and Thursday, November 13-16, 1922. Dr. Searle Harris, Birmingham, Alabama, President.

PROCEEDINGS OF THE OKLAHOMA
CITY CLINIC "ROUND TABLE,"
WESLEY HOSPITAL.

TWO CASES OF PYELITIS IN CHILDREN,
RESISTANT TO MEDICINAL TREATMENT.

By JOHN Z. MRAZ, M. D.

No. 1. Serial No. 8390—Girl 5½ years. At age of 4, had measles, and a few months later pertussis. A few weeks after recovery from pertussis, she developed a colitis, associated with the passage of large amounts of mucus and blood.

PRESENT TROUBLE.

Since the measles she has had a great deal of urinary frequency and vulvar irritation. Nocturia varies from once to four or five times per night. Two months ago, had an attack of irregular fever with chills. Has had much and varied medicinal and dietetic treatment with only very temporary improvement. Tonsils and adenoids removed 8 months ago. Bowels constipated.

PHYSICAL EXAMINATION.

Negative except as follows: Child pale and undernourished. Stubs of both tonsils present. Catheterized specimen of urine shows large amount of albumen and a gross number of pus cells. Culture shows colon bacilli.

TREATMENT.

2-11-22, Right ureter catheterized and 3 c. c. of 1½% silver nitrate left in kidney pelvis.

2-28-22, Above treatment administered to both kidney pelvises.

3-30-22, 3 c. c. of 1½% silver nitrate instilled into right kidney pelvis.

This treatment was repeated on 4-21-22, and 5-11-22. Remnants of tonsils removed by Dr. Pollock of Ardmore.

RESULTS.

After the first lavage of right kidney pelvis, clinical improvement began and after second treatment no pus was found in right kidney urine. The left kidney urine was clear, therefore, treatment was confined to right kidney. The bladder urine began to clear up coincidentally with the disappearance of pus from the right kidney urine. At end of treatment, the segregated and mixed urines were negative to urinalysis and culture.

No. 2. Serial No. 8411—Girl age 6 years.

PERSONAL HISTORY.

Negative except for several slight attacks of tonsillitis and an attack of "Flu" in fall of 1918 which confined patient to bed for 9 days.

PRESENT TROUBLE.

Soon after recovering from the "Flu," she began having attacks of pain in right lumbar region associated with fever, chills vomiting, and occasionally, burning urination. At first attacks recurred every 2 or 3 months, but they have been growing more frequent and of late not more than a week or two elapse between attacks.

PHYSICAL EXAMINATION.

Anemic looking child, but fairly well nourished. Tonsils are reddened and show infection. Otherwise negative.

Urinalysis (catheterized specimen) shows large amount of albumen and many pus cells. Culture showed colon bacilli.

TREATMENT.

7-16-22, Right ureter catheterized, 3 c. c. of 1% mercurochrome solution instilled into right renal pelvis. Urine from right kidney at this time showed many pus cells. Culture showed colon bacilli. Left kidney urine negative.

7-25-22, Right renal lavage with 3 c. c. mercurochrome 1% solution.

7-31-22, Treatment repeated as above. Tonsillectomy by Dr. J. C. Macdonald.

RESULTS.

After first treatment, the pus disappeared from right kidney urine and symptomatic improvement began immediately. The bladder urine cleared up more slowly but has remained clear since last treatment.

REMARKS.

The results in these two cases, confirm the observations of many other urologists that pyelitis in children even though very resistant to medicinal and dietetic treatment often clears up with remarkable promptness under lavage of the kidney pelvis.

In both the above cases, the pus in the kidney urine cleared up so promptly that I would have suspected a mistake in the urinalysis had not the clinical symptoms begun to improve just as promptly.

I do not mean to condemn medicinal and dietetic treatment. On the contrary, I believe that the conservative treatment

should always be given a trial first. But after a reasonable length of time, if there has not been complete disappearance of pus from the urine, then these children should be given the advantage of pelvic lavage just as we do in adults. Pelvic lavage is made possible in children, because of the delicate cystoscopes that are now made for that purpose.

It is my belief that by clearing up these kidney infections in childhood, we prevent many serious kidney infections later in life, for it is well known that pyelitis may begin in childhood, and after a period of latency extending over many years, light up anew often with destructive results. Pyelitis in childhood is often more difficult to diagnose than in adults. It is a good rule to suspect it in any recurring fever of obscure origin. The value of routine urinalysis is here well demonstrated.

CASE OF INFECTED GALL BLADDER WITH INFLAMMATORY THICKENING OF THE COMMON DUCT AND HEAD OF THE PANCREAS — CHOLECYSTECTOMY WITH DRAINAGE OF THE CYSTIC DUCT.

By MARVIN E. STOUT, M. D.

Mrs. H., Case No. 8479. Age 52. Had usual exanthemata, no other diseases, injuries or operations, except an incision of the left breast for puerperal infection, many years ago, recovery good. Otherwise puerperal and menstrual life normal. Passed menopause three years ago. No flow since. Aside from the present trouble patient has enjoyed good health.

Present trouble began twenty years ago with an acute attack of pain in the upper right quadrant, with fever, nausea and vomiting. Duration was of three or four days. Dr. Harry Peel, of Louisville, Ky., made a diagnosis of gall stones. Surgery was advised, but operation was refused. Patient continued to have similar attacks at intervals of from two to four months from this time up to about six months ago when the attacks became more frequent and much more severe, and with the last few attacks she has been slightly jaundiced. She has also had a marked digestive disturbance for the past few months which has consisted of gaseous eructations, sour stomach and a feeling of distress and fullness.

The present attack began forty-eight hours ago with severe pain in the region of the gall bladder, nausea and vomiting, and her physical examination revealed a well-nourished portly woman, scleras slightly

tinged with bile. Temperature 102, pulse 120. Marked tenderness and rigidity over the gall bladder region. Otherwise negative. White blood count 18,200. Polies 82, coagulation time, three minutes. Urine normal.

Operation June 14, 1922. Gall bladder enormous size very much distended with sero-perulent material, and filled with stones. The walls were thickened and presented a number of necrotic areas. The common duct was thickened but contained no stones and the head of the pancreas was very large and indurated. The gall bladder was removed, a purse string was placed around the stump of the cystic duct and a catheter was inserted into it for drainage of the pancreas and bile ducts. Another tube was placed beneath to drain the abdominal cavity. The wound was closed in the usual manner.

On the following morning her temperature had subsided to 100 and her general appearance was considerably improved. There was free bile drainage through the catheter for ten days, when it was removed, and the drainage subsided some ten days later. She reports complete relief up to date.

REMARKS.

I believe that in these advance cases of gall bladder infection where the bile ducts and pancreas are also involved, that we will secure better and more lasting results by removing the gall bladder and establishing drainage through the cystic duct in this way than by simple drainage, or by cholecystectomy without drainage of the ducts. It gives us all of the advantages of both cholecystectomy and of drainage, and should make for a more speedy and permanent cure.

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By W. W. RUCKS, M. D.

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NEW BOOKS.

Diseases of the Skin. Second edition, by Henry H. Hazen, A. B., M. D., Professor of Dermatology in the medical department of Georgetown University; Professor of Dermatology in the medical department of Howard University. Cloth. Price \$7.50, 596 pp. with 241 illustrations. St. Louis The C. V. Mosby Co. 1922.

This book in the first ninety pages clearly and concisely deals with anatomy and physiology of the skin, general etiology, symptomatology, pathology, diagnosis, treatment and hygiene. In the remaining 27 chapters diseases are taken up according to their suspected etiology. Especial em-

phasis has been placed upon the x-ray and radium treatment of various diseases, also phototherapy. Numerous illustrations are given of the more common diseases. Histopathology is well dealt with under each described disease. This book will serve as an excellent guide both to the general practitioner and the dermatologist.

Principles and Practice of X-Ray Technique for Diagnosis, by John A. Metzger, M. D., Roentgenologist to the School for Graduates of Medicine, Medical Department, University of California. Cloth. Price \$2.75. Pages 137, with 61 illustrations. St. Louis. The C. V. Mosby Co.

This is an excellent book on technic and well written. It does not deal with diagnosis, nor go into detail with fundamental electricity for Roentgenology. On dark room technic, positions and exposure, it deals in minute detail. There are other chapters on dental and oral radiography, stereoscopy and localization that deserve mention for their clearness and brevity.

COUNTY SOCIETIES.

Marshall County Medical Society met August 10th with Dr. O. E. Welborn, Kingston, with the following medicos in attendance: Drs. Holland, Blalock, Gaston, Robinson, Ballard and Hart of Madill, and Drs. Lewis, Welborn and Haynie of Kingston. Maralia was the subject under discussion.

McIntosh County Medical Society met at Eu-
faula, Tuesday, September 19th, 1922. Subject: Typhoid fever. General discussion opened by Dr. J. C. Watkins.

Kiowa County Medical Society met at Mountain Glen, on August 15th, accompanied by their families; swimming was followed by a picnic supper, after which the society held its scientific program.

Tulsa County Medical Society held their first meeting after the summer vacation, Monday, September 11, 1922, at 8 P. M., at the Municipal Auditorium, Tulsa. Program: "Removal of Infected Tonsils Early in Life"—Dr. T. W. Stallings. "Presentation of Clinical Cases"—Dr. J. W. Childs.

Carter County Medical Society met Thursday, September 14, at the home of its president, Dr. G. W. Ammerson.

PRESYSTOLIC MURMURS IN RAPID HEART SIMULATING MURMUR OF MITRAL STENOSIS.

Ernest E. Irons, Chicago, and Alpheus F. Jennings, Detroit (*Journal A. M. A.*, April 1, 1922), record observations on three patients in whom there were heard murmurs similar to those of mitral stenosis and in whose hearts at necropsy no harrowing of the mitral valve was found. The report of a fourth case in which the presystolic murmur was noted in a large heart without mitral narrowing is added. The authors emphasize the fact that the recognition of such cases is important in the proper interpretation of physical signs and in the diagnosis of disturbances of the heart, and also is of theoretical interest in the determination of the actual time incidence and mechanism of production of the crescendo or rumbling murmur and thrill of mitral stenosis which terminate in a sharp or snappy first sound and have been commonly called presystolic in time, but which is really early systolic in time.

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive the Journal should call for immediate notification of the editor, 508 Barnes Building, Muskogee, Okla.

Local news of possible interest to the medical profession, notes on removals, changes in address, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application. It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

EDITORIAL

DR. BENJAMIN HENTON BROWN

NOVEMBER 22, 1870—SEPTEMBER 9, 1922.

No death in the Oklahoma medical profession has produced as sincere feeling of irreplaceable loss and regret as that of Dr. Benjamin H. Brown, Muskogee, which came after a short, severe illness due to streptococcal infection, terminating in septic pneumonia.

Born at Waverly, Mo., when the Civil War had unsettled all things, the difficulties incident to acquiring an ed-

ucation of the finished character he achieved, is of itself indicative of the high courage inherent in the man. Son of a surgeon of the Confederate Army, he sprang from a long line of distinguished forbears, both on his paternal and maternal side, his mother closely related to ex-Governor Walker of Virginia, and ex-Senator Hopkins of Illinois, while his father was a relative of John C. Calhoun. It is characteristic of the innate modesty of the man that these illustrious connections were never advanced by Dr. Brown, not even to his intimates, and the knowledge is only at hand by reason of his methodical habits which led him to write a biography of his life up to the time he married in 1911. This work is so well written, contains so much of value and worth that it will be given partial reproduction in this JOURNAL. After attending the common schools of his neighborhood he entered Wentworth Military Academy, Lexington, spending several years, during which time he "got into rather more than my share of mischief." Graduating from Wentworth in June, 1890, he received the Washington and Lee scholarship for having the highest standing in a class of twelve. One of six to enter the competitive drill, he states he was too "nervous," but despite that attained second place, later attending the Interstate Military Drill at Kansas City, where his liveliest memory was that the dinner at the Coates House "cost a dollar a head," a fact upon which "we immediately decided that the fare was too rich for young men of our limited means." On returning to his home he writes: "I stopped off at Lexington . . . to return to the matron . . . the key to the kitchen door, of which I had secretly possessed myself some months before, and which had, on several occasions proven a friend in the time of famine, to which a growing boy is so prone."

Recalling his feeling of awe on first stepping on the campus at Washington and Lee and viewing the "old buildings so rich with memories of great men and the Old South . . . Certainly that school embodies in its traditions and teachings all that is

best of a noble race of people;" he briefly chronicles the events so dear to memory, among which was a trip of six days to Washington, where he saw "all the sights," incidentally shaking hands with President Harrison. He was able to win each year a scholarship, thus having no tuition to pay, quite a saving in his circumstances. He had a scholarship to spare when he left the college. Almost losing opportunity to enter his last year, that difficulty was finally obviated by his plunging into debt to a high degree, comparatively. Receiving his degree June, 1893, that year of all years in our history when all things were at the lowest ebb, employment of any sort was simply unobtainable, so he turned to the farm where, as he states it, "my folks were land poor"—fifty acres I sowed in clover was an absolute failure . . . wheat I made I was compelled to let go at 19 cents a bushel." From this labor he undertook, successfully, a high school principalship and for several years teaching was his vocation. During this work he was enabled to pay off his indebtedness, as well as save some money. His principal diversion in these, his Texas locations, was bird shooting, where he became a "fair shot." His description of the Galveston storm is vivid; though he was a hundred miles away, the shock of the two or more days of continued wind was a matter of great concern. County seat wars, gambling, saloons, outlawry generally, affected and influenced the country generally at that time, and Dr. Brown's narrative of his observations and experiences are intensely interesting. His decision to teach no longer ended with his entrance into the study of medicine at Rush Medical College in January, 1904, where he completed his work in 36 months of study. He served in every available hospital position open to him between terms, his first being at the Lying-in-Dispensary where "I had 10 cases in 17 days." He was elected to the Alpha Omega Alpha, an honorary medical society, whose membership was based on scholarship. It is not surprising to those who knew the man to learn that when

the time came for election he was elected president of his class. His time in the last year at Rush, aside from his regular duties, was special work under Robert LeCount on "Primary Carcinoma of the Bladder." "The results . . . were published under my name in the American Journal of Medical Sciences, November or December, 1907." "LeCount gave me a letter to Dr. Nicholas Senn, who gave me the appointment as interne on his service at the Presbyterian Hospital." He graduated from Rush March 21, 1907, receiving his diploma in the upper amputheatre, "notwithstanding I was suffering from influenza, and had a temperature of 102 at the time." His internship began with the administration of anesthetics. The latter part of June Dr. Senn left for his South American trip, Dr. Brown giving the last anesthetic ever to aid that brilliant surgeon, who, shortly after his return a desperately sick man, died about the end of the year. Later assisting E. J. Senn, and doing service in the pediatric section as well. It was in this service, under Churchill and Dodson, that Dr. Brown administered the first intra-spinal injection of Flexner's antimenigitic serum ever given in Chicago. His work, now more than ample, called him successively to the clinics of Hyde, the eye and ear and cleft palate cases, the latter work bringing him in contact with Shambaugh, Brophy, Brower and Herrick. He also, through the friendship and interest of Metcalf, was made an assistant to Webster, while Ewing contacted him with Bevan and Lewis and Wilson and Murphy; through Rosenberger, he also assisted Graham . . . "Taken all in all I do not think any interne at the Presbyterian, during my day or before, had a more valuable or rounded service." After termination of his work at the Presbyterian he served as examiner for the Burlington, with headquarters at Alliance, Nebraska, for a time, his district covering some 1200 miles of the system, then was transferred to various locations. From that work he moved to Iron River, Michigan, for 18 months, intending, after his term of service

there to locate in the southwest, but, upon the persuasion of his employer, plus increased financial inducements, remained for a time longer. This was fortunate for him, for, as he says, he became engaged to "the sweetest and best girl in the world," so July 1, 1911, he was married to Miss Margaret Heppen, after which they removed to Muskogee, where he soon evidenced his remarkable ability and worth to a large clientele. Upon our entrance into the World War, Dr. Brown's principles and ideals of duty permitted him no conclusion except to enter the service as an army surgeon, where he served at Forts Sill, Leavenworth and Camp Knox successfully, being rapidly promoted from his lieutenantcy to a majority. It was during this time that he suffered severely from influenza and there is hardly a doubt that the residue from that infection was the indirect cause of his death at a time when life promised most and only success was crowning his pre-eminent career, after years of intelligent application. His mother, wife and four children survive him. His remains were interred by the side of his father in the Waverly (Mo.) cemetery, burial being under Masonic auspices at Waverly.

The writer, recalling one of his truest friends and sage advisors in all things, feels his utter inability to approximate the virtues of his departed friend. A few months prior to his demise he kindly consented to aid in the JOURNAL'S work, and it is a matter of sincere regret that our membership could not have the results of his finely equipped mentality and premier worth. Without question his loss to the Oklahoma profession is irreparable.

THOMPSON.

OUR MEDICAL SCHOOLS.

Since the American Medical Association inaugurated the campaign more than twenty years ago for raising the standard of medical education in the United States there has been a revolutionary change in the equipment and methods of teaching in our medical colleges. The increased requirements of most of our State Boards of Medical Examiners has forced many of the smaller medical schools that were un-

able to meet these requirements to quit and others to merge into larger endowed institutions. The number of students has been lessened greatly and the average quality of the student body is considerably higher. The educational attainments and scientific training of our graduates average much higher than were those of the graduates of two decades ago.

All of these are changes for the better and no one would want to see a return of the old-time medical school that was operated in the financial interests of the members of its faculty, nor would we want to see the educational requirements for students lowered.

However, there are grave doubts as to whether our better medical schools as now conducted are meeting all the needs of the country. The present requirements of our Class A schools are, two year's college work, four years in medical school, internship in an approved hospital. This means seven years after graduating from high school before the student can take an examination to become a licensed physician. The charge is made that in most of our medical schools too much attention is being given to the scientific side of medicine. As the practice of medicine is not an exact science but has always been regarded as an art, the graduates of these institutions are really not prepared to practice medicine after seven years of costly preparation.

Instruction is given in the laboratories, class rooms, free dispensaries, clinics and the hospitals. All of these are excellent methods but when do our students receive the training that is to prepare them to become what has always been the backbone of the medical profession, the family physician? How many recent graduates of Class A Schools do you know who have located in communities where there are no hospitals? Their training has been such that access to a hospital seems a necessity. Owing to the "over production" of medical graduates in years gone by, most of our rural districts and small towns are still amply provided with physicians, but who is to take their places when these men drop out? Even now the need is being felt in some parts of the country. Two courses are open to overcome this tendency. Either our medical schools must prepare men who will be willing to do the work in these communities as they are, or changes in the communities themselves must be made so as to make them attractive to our present-day and future graduates.

Some of our schools have recognized the lack of the personal touch in their educational scheme and are endeavoring to return to a modified form of the old preceptor plan. This will unquestionably be an advance over the present system, and should work to the advantage of the schools, like our own State Medical School, that has, comparatively speaking, a small number of students.

While this will remedy a part of the defects in our present system it is doubtful if it will supply physicians for communities without hospital facilities, as it is certain that most of the students would have as their preceptors physicians near the school or in the larger cities.

When the pressure from this need becomes great enough it will be met, but in what way has not yet been determined.

NESBIT.

Editorial Notes—Personal and General

Dr. J. O. Irwin, Ashland, has been very sick with influenza.

Dr. John Dorough, Maysville, has located in Perry, Oklahoma.

Dr. G. A. Kilpatrick, Wilburton, has removed to Henryetta, Oklahoma.

Drs. C. B. and Pauline Barker, Guthrie, spent July and August in the Eastern clinics.

Dr. and Mrs. J. L. Houseworth, of Guthrie, spent August in Los Angeles, California.

Dr. D. P. Chambers, Stilwell, has moved to Norman, where he will continue to practice.

Dr. Waverly Hume, Henryetta, has returned to Coalgate, where he will resume his practice.

Dr. and Mrs. E. O. Barker, Guthrie, spent the summer touring the Eastern states in their car.

Dr. B. W. Ralston, Lindsay, has removed to Okmulgee, where he will limit his practice to urology.

Dr. G. E. Stanbro, Pawhuska, is in Baltimore taking a post-graduate course in Johns Hopkins University.

Dr. S. E. Mitchell, formerly of Stigler, has moved his offices to rooms 811-12 Barnes Building, Muskogee.

Dr. J. C. Mahr, Oklahoma City, addressed the Kiwanis Club, Enid, Oklahoma, October 3, 1922 on the subject of "Community Help."

Dr. Louis Bagby, Vinita, has returned from St. Louis, where he has been taking a special course on diseases of the chest and stomach.

Dr. L. E. Emanuel, Chickasha, made a trip to Galveston to attend the District Convention of the Kiwanis Clubs held there this month.

Dr. and Mrs. L. A. Hahn, Guthrie, spent July and August visiting the Clinics of Europe and attending the Passion Play at Oberammergau.

Dr. W. E. Dicken, Oklahoma City, is reported seriously ill in a hospital in Pasadena, California, where he has been spending some time this summer.

Dr. E. M. Miller, Buffalo, has returned to his home after a three months stay in the hospital at Wichita, Kansas, where he underwent an operation on his knee.

Dr. J. M. Pemberton, Okemah, has returned from Chicago, where he has been taking a post-graduate course in medicine. He will resume his practice at Okemah.

Dr. H. A. Dever, El Reno, has returned from a lengthy auto trip, having covered over seven thousand miles in his journey through California and British Columbia.

Drs. Wm. H. Bailey, T. C. Terrell and W. F. Keller announce the opening of the Bailey-Terrell Laboratories at 345-6 American National Bank Building, Oklahoma City, Oklahoma, October 1, 1922.

Dr. A. S. Graydon, Idabel, while enroute to Sulphur, Oklahoma, October 7th, was stricken with paralysis, affecting his entire left side. Dr. Graydon was taken to Sulphur, where he has been resting well. He will be out in a short time.

Dr. Frank H. McGregor, Mangum, and 20 members of Paul Garrett Post, American Legion, motored to Bartlesville to attend the State encampment of the American Legion and to push the candidacy of Dr. McGregor for State Commander.

DEATHS.

Alexander Righter Craig, Secretary of the American Medical Association since 1911, died of uremic poisoning while on his vacation at Port Deposit, Maryland, September 2, aged 54. Dr. Craig was born in Columbia, Pa., July 31, 1868, the son of Dr. Alexander Craig and Eleanor Margaretta Righter Craig. He received his A. B. degree from Franklin and Marshall College, Pennsylvania, in 1890, the A. M. degree in 1893 and the M. D. from the Medical Department of the University of Pennsylvania in 1893. In 1920 he was granted the honorary degree of Doctor of Science by Franklin and Marshall College, his alma mater. Following his graduation in medicine Dr. Craig served as resident physician at the Philadelphia Polyclinic Hospital, 1893 to 1894. He then practiced in Philadelphia until 1895 and in Columbia, Pa., from 1895 to 1906, when he removed to Philadelphia and continued practice until 1911. At the Los Angeles Session, in 1911, he was elected Secretary of the American Medical Association; this election was the culmination of many years of service to organized medicine.

On August 25 he left for his vacation at the family farm in Port Deposit. Tele-

grams announcing his death, September 2, were the first intimation had of his serious illness. The funeral was held at Port Deposit, Md., September 6. Dr. George E. de Schweinitz, President, represented the Association at the funeral. Dr. Craig was universally loved, a man with never a harsh word, calm, self-effacing, reticent, and withal a marvel of efficiency in his chosen work.

Dr. T. S. Booth, of Ardmore, Oklahoma died September 23, 1922, of cerebral hemorrhage. Dr. Booth installed the first telephone in Ardmore, Oklahoma, and his practice was very extensive throughout five counties in that locality. He was a member of the Oklahoma State Medical Association, the Southern Medical Association, and the North Texas Medical Society. He was a member of the Woodmen and a 32d Degree Mason.

Dr. F. L. Hughson, formerly of Vinita, Oklahoma, died in Breckenridge, Texas, September 14, 1922, from pneumonia.

Dr. James McMillan, Goodwell, Oklahoma, was found dead in his building at Goodwell, September 14, 1922.

OPENING OF SULPHUR SANITARIUM.

Legion men from all over Oklahoma, as well as prominent citizens not connected with the ex-service man's organization, were present at the formal opening of the Sulphur Soldier Hospital on Saturday, August 26th.

The completion of the Soldiers' Sanitorium at Sulphur marks the first material step in the splendid hospitalization program which the State and the American Legion are putting through in Oklahoma. When the finishing touches are put on, particularly terracing of the lawns about the buildings, the Hospital structures will represent one of the most imposing groups of its kind in this section of the country. The location is ideal, being on a high spot about three-fourths of a mile south of the city of Sulphur, overlooking Platte National Park. The Ardmore-Sulphur highway passes by the grounds.

In all there are seven buildings in the group, including the administration, dining room, personnel, cottages and ward, medical superintendent, nurses' home and power plant and laundry.

The administration building contains the general offices, office of the head nurse, medical superintendent, assistant to the medical superintendent, staff conference room, medical library, stores, nurses' conference room, dental room, dining room, storage room for medical records, eye, ear, nose and throat room, x-ray and dark room, x-ray storeroom, laboratory, preparation room, examination room, dressing room, and minor surgical room. Beneath this building there is a cellar which will be used as a general storeroom. The administration building is 143 feet long and 40 feet wide.

The kitchen and dining room building contains the main kitchen, storeroom, patients' dining-room, personnel diningroom, and staff dining-room.

The cottage and ward building contains twelve 2-patient cottages with sleeping porches, a living room 26x34 feet and sun parlors at each end of the cottages. There is also the wash room, lavatories, nurses' station, diet kitchen, dining room, utility room and linen closet, storage room, five single rooms, two 2-bed wards, two 3-bed wards, one 10-bed ward, and a solarium. The cottage building is 250 feet long and 40 feet wide, and the ward building is 160 feet long and 30 feet wide.

Has Nurses' Home.

The personnel building contains a living room, bedrooms, etc. The nurses' home has a living room, small kitchen and six bed rooms. The medical officer's residence has a living room, a kitchen, two bed rooms and a bathroom.

The power plant and laundry, both of which are equipped with the most modern machinery, complete the group. The buildings are heated by steam, using coal as fuel. Water for drinking and other purposes is secured from the city of Sulphur.

The sanitarium is entirely under civilian supervision. It is operated by the State and the Veterans' Bureau. Patients are handled by contract between the State and the Bureau.

Administrative affairs of the Hospital are under the supervision of the Soldiers' Relief Commission, which is composed of H. B. Fell of Ardmore, Chairman; S. G. Victor of Afton, and H. H. Magan of Tulsa, all of whom were appointed for a two-year term which expires on June 30, 1923.

Room for Seventy-Five.

There is room for 75 of the disabled heroes at the Sulphur institution. A recent survey revealed that there are at the present time a total of 138 Oklahoma boys designated as tubercular patients, who are confined in medical institutions in the states of Texas, Arizona, New Mexico and Washington. Of this number 43 are at the United States Veterans' Hospital No. 25 at Houston. Climatic conditions at Houston are unsuitable for the treatment of tubercular patients, according to the Oklahoma officials, and it has been requiring considerable effort on the part of those in charge to persuade the Oklahoma ex-service men to remain there. Many of them have returned to Oklahoma and their pathetic pleas for accommodations here were so great that in justice to them means for such institutions as is now located at Sulphur had to be provided. An effort was made to secure a government hospital, but the only means feasible following negotiations with the federal authorities was a hospital of state construction.

The cost of the Sulphur sanitarium was approximately \$180,000, including buildings, fixtures, etc.

Dr. Barton H. Watkins is medical superintendent in charge of the institution. He came here from Gotebo, Oklahoma, and was formerly connected with the United States Public Health Service at sanitariums in Arizona and New Mexico.

RESOLUTIONS ON THE DEATH OF DR. BENJAMIN H. BROWN.

WHEREAS, The Muskogee County Medical Society has, by the death of Dr. Benjamin H. Brown, lost a member who has been very active in the Society since he came to Oklahoma some eleven years ago;

BE IT RESOLVED, That this Society has lost one of its most valued members, one who was at all times willing to do his duty as a physician, a man, and a citizen;

That this Society wishes to express its appreciation of the work of Dr. Brown in the Society. His preparation of scientific papers and his discussions always represented careful study, concentration and good judgment. He served the Society for one year as President and two years as Secretary, being at all times faithful and cheerful in the discharge of his duties.

BE IT FURTHER RESOLVED, That a copy of these resolutions be sent to the family of Dr. Brown and that they become a part of the permanent records of this Society.

W. D. BERRY.

C. M. FULLENWIDER.

P. P. NESBITT.

Muskogee, Oklahoma,
October 2, 1922.

HOSPITALS.

The State Board of Affairs has granted the University Hospital at Oklahoma City permission to drill a deep water well for the use of the Hospital. This will give the Hospital its own water system which in the past has been badly needed by that institution.

The report recently filed by Dr. G. A. Waters, warden of the State Reformatory at Granite, Oklahoma, shows that the average number of inmates has been 512 and that the daily average cost for each inmate has been \$1.05. The farming account shows a profit of \$22,860.06; the stone quarry a profit of \$22,343.95; the shoe shop a profit of \$1,074.16 and the tailor shop \$1,064.33.

Watonga has a new Hospital which has recently been opened. Dr. J. B. Leisure has the hospital nicely equipped, having recently returned from Oklahoma City, where he selected the furnishings.

HOSPITALS FOR SOLDIERS.

The American Legion of Oklahoma and the Soldiers' Relief Commission, with the aid of the State, have provided three hospitals to accommodate ex-service men. One hundred beds are available at University Hospital at Oklahoma City, for Oklahoma men whose disabilities are not traceable to service, accepting general cases only.

The Soldiers' Tubercular Hospital at Sulphur will accommodate eighty tubercular patients. The Soldiers' Memorial Hospital at Muskogee, to be completed about December 15, 1922, will have 500 beds and will be leased by the Veterans' Bureau.

OKLAHOMA DOES THINGS.

Oklahoma is doing more for the hospitalization of its world war soldiers than any other State in the Union, and almost as much as the Federal Government itself. The Government has had twenty million dollars at its disposal to build hospitals for soldiers and has done practically

nothing with it. Oklahoma had one and a quarter million dollars and with that money will, before the close of the year, have completed hospitalization for as many soldiers as the Federal Government has. In Oklahoma we do things. In Washington they talk about doing them.

MEDICAL SERVICE AT MODERATE COST.

"A modern clinic may serve the interests of both preventive and curative medicine. Persons may resort to it to make sure that they are well or to have their diseases recognized and treated. Diagnostic and treatment facilities are now available in cities and large towns for the rich and well-to-do and for the very poor, but self-respecting people of small means are too often at a loss for good medical aid. It is true that the leading consultants and specialists make concessions in individual cases but this generous attitude of the profession solves only a minute part of the problem. The tendency to establish medical group clinics makes it easier to provide modern facilities at lower cost, but at best the fees are considerable, and many people hesitate to ask for a concession in charges. Hence the demand for a pay clinic for persons with small incomes.

"An experiment in meeting this demand was begun by the Cornell University Medical School in New York City in November, 1921, with the co-operation of a special committee of the United Hospital Fund. The work of this committee, which is helping to improve standards of dispensary management and service, is supported by the Rockefeller Foundation. The initial deficit of the Cornell clinic demonstration, which is expected to become self-supporting, was underwritten by this committee.

"The essentials of the plan are: (1) medical, surgical, and specialist service by well-trained young doctors, who are paid for their work, (2) supervision by the college faculty, (3) instruction of medical students in the clinic, (4) appointments with patients made by telephone or post to avoid waste in waiting, (5) clinics, in addition to day sessions, open two evenings a week for the convenience of patients employed during the day, (6) a charge of \$1.00 for each call, laboratory examinations and X-ray plates at cost, a complete diagnostic examination for an inclusive fee of \$10 for patients referred by physicians. On the day the clinic opened 700 persons presented themselves. There has been a steadily growing patronage ever since. An increasing number of doctors have brought patients for diagnosis and consultation. It is too early to assert that clinics of this kind will satisfactorily solve the problem, but experience so far has been distinctly significant and encouraging."

PRIMARY ACTINOMYCOSIS OF SKIN.

Surgical solution of chlorinated soda (Dakin's solution) gave prompt results in the case cited by M. J. Baskin, Alliance, Neb. (Journal A. M. A., May 6, 1922), after the administration of potassium iodid, internally, and boric acid, locally, had failed to give results. The lesion is covered with gauze which is kept constantly saturated with the solution. At intervals, moist heat is applied over the gauze. This results in the decomposition of the solution with the liberation of free chlorine, and to this Baskin attributes his results.

STANDING COMMITTEES.*

Medical Defense—Drs. L. S. Willour, Chairman, McAlester; J. H. White, P. P. Nesbitt, C. A. Thompson, Muskogee; McLain Rogers, Clinton.

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*This list is published bi-monthly.

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District No. 1. Texas, Beaver, Cimarron, Harper, Ellis, Woods, Woodward, Alfalfa, Major, Grant, Garfield, Noble and Kay. A. S. Risser, Blackwell. (Term expires 1924.)

District No. 2. Dewey, Roger Mills, Custer, Beckham, Washita, Greer, Kiowa, Harmon, Jackson and Tillman. L. A. Mitchell, Frederick. (Term expires 1923.)

District No. 3. Blaine, Kingfisher, Canadian, Logan, Payne, Lincoln, Oklahoma, Cleveland, Pottawatomie, Seminole and McClain. Dr. Walter Bradford, Shawnee. (Term expires 1925.)

District No. 4. Caddo, Grady, Comanche, Cotton, Stephens, Jefferson, Garvin, Murray, Carter, and Love. J. T. Slover, Sulphur. (Term expires 1924.)

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District No. 7. Pawnee, Osage, Washington, Tulsa, Creek, Nowata and Rogers. Chas. H. Ball, Tulsa. (Term expires 1923.)

District No. 8. Craig, Ottawa, Delaware, Mayes, Wagoner, Cherokee, Adair, Okmulgee, Muskogee and McIntosh. P. P. Nesbitt, Surety Bldg., Muskogee. (Term expires 1925.)

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Second Vice-President, W. A. Tolleson, Eufaula.

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Secretary-Treasurer-Editor, Dr. Claude Thompson, 508 Barnes Bldg., Muskogee, Okla.

Associate Editor, Councillor Representative, Dr. P. P. Nesbitt, 710 Surety Bldg., Muskogee.

Meeting Place, Tulsa, May, 1923.
Delegates to the A. M. A.: Dr. W. Albert Cook, Palace Bldg., Tulsa (1923-1924); Dr. J. M. Byrum, Shawnee (1922-1923).

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Reciprocal relations have been established with Missouri, Colorado, New Jersey, California, on basis of examination only. Arkansas, Georgia, Indiana, Iowa, Kansas, Kentucky, Michigan, Mississippi, Nebraska, Nevada, New Mexico, North Carolina, Ohio, Tennessee, Texas, Vermont, Virginia, Washington, Wisconsin, West Virginia, on basis of a diploma and a license without examination in case the diploma and the license were issued prior to June 12, 1908.

Meetings held on first Tuesday of January, April, July and October, Oklahoma City. Do not address communications concerning State Board examinations, reciprocity, etc., to the Journal or to Dr. C. A. Thompson, Secretary, but to Dr. J. M. Byrum, Shawnee, Secretary of the Board.

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ONE of the best surgical practices in the State of Oklahoma for the purchaser of my office equipment, which will invoice about \$1000. No other than a first-class man need apply. If you can do surgery and are looking for a location, investigate. It is worth while. Good reasons for leaving the State. Address SDB, Journal.

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THE JOURNAL

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HEADACHES OF NASAL ORIGIN.

EDWARD A. ABERNETHY, M. D.,
Altus, Oklahoma.

In briefly considering the subject of nasal headaches, it would be manifestly impractical to enter into a general discussion of the various phases of this condition.

A paper of this scope will not permit of more than a small outline of a few predisposing causes and symptoms, with a few suggestions for treatment.

The largest percent of these cases will consult the Optometrist, Osteopath and Chiropractor before consulting their family physician. It is of personal importance that the family physician adopt a course of treatment, or refer the patient to a Rhinologist who will reflect credit upon himself, and produce the best results for his patient.

The profession in the past has been so indifferent about this class of cases, that these unfortunate patients have become an easy prey to the quack and cults, that thrive upon the ignorance of the laity.

After long years of diligent study and investigations made by Ewing, Mosher, Sluder and many others, the Rhinologist of today can successfully diagnose and treat these cases, if he will only profit by the information given by these early investigators of this class of cases.

The symptom headache is a condition that causes the medical men of all lines a great deal of annoyance, and when successfully treated, gives happiness to the patient and delight to the physician.

The causes of headache are so numerous, we must rely largely on the process of elimination of causes for our etiology and diagnosis, especially when we have a patient who has other pathology that frequently causes headaches of the different types.

The headaches of nasal origin for our convenience are divided into three classes: Vacuum frontal sinus headaches, Spheno-

palatine ganglion neurosis and hyperplastic sphenoiditis.

VACUUM FRONTAL SINUS HEADACHE.

The vacuum frontal sinus headache is the most common of the three varieties.

For our study today, I will discuss only the non-suppurative type of vacuum frontal sinus headache, as the symptoms and history will readily lead to a diagnosis of the headaches caused by empyemas of the frontal sinus. The term vacuum headache calls our attention at once to the etiology of this form of headaches as a vacuum is formed when the air communication between the frontal sinus and the nose is interrupted. Any local condition of the nose which will close the fronto-nasal duct, will result in a vacuum headache.

For convenience as to the etiology of this condition, Dr. Jonathan Wright divides these cases into six classes. The first class is a normally thin septum, with the tilting of the septum to one side, which closes the vault of the middle meatus and its pouches. About 38% of the cases is of this variety.

The second class are those which appear clinically normal. By this I mean the middle turbinate is normal in size, tubercle of septum normal, and the vault of the meatus open. And those cases which give no history of having had empyema or coryza as starting of trouble. The closure of the fronto-nasal duct of this class of cases is a result of bony narrowing of the fronto-nasal duct because of the enlargement of the uncinate process which brings the bulla in contact with the uncinate process, thus closing the nasal duct. This class constitutes 24% of the cases.

The third class are those which have oedema of the vault of the middle meatus without special hypertrophy of the cavernous portions of the middle turbinate. These are the cases which develop polyps. This class constitutes about 15% of the cases.

The fourth are those which have hypertrophy of the middle turbinate, which closes the nasal vault, uncomplicated by suppuration or polyps. This class constitutes about 11% of the cases.

The fifth class are those which have insufficiency of the vault. This is an anatomical defect. The middle turbinate simply laps down against the external wall, thus closing the nasal vault. About 7% of the cases are of this origin.

The sixth class are those which result from empyemas of the frontal sinus. About 3% of all cases are from this cause.

The symptoms of frontal sinus headache are so constant, it enables us to diagnose these cases with little difficulty unless complicated with other pathology of this region. Ewing's sign which is present in 99% of these cases, and which is reliable, enables us to make a diagnosis without question, when it is present. This sign is revealed by tenderness of the upper, inner angle of the orbit at the point of attachment of the pulley of the superior oblique, and internal and posterior to it. This sign must not be confused with the tenderness caused by pressure over the supra-orbital notch, which is always present in the normal subject. But with little care we can press our finger firmly against the floor of the sinus without making any pressure whatever over the supra-orbital notch.

A dull, nagging headache of the frontal region, increased by reading, and continuation of headache through the night, followed by morning headache, are symptoms which point unmistakably to a vacuum frontal sinus headache.

The increase of pain by reading is a symptom to which I wish to call your special attention. Many mistakes have been made in prescribing glasses for these cases when they needed treatment for a definite pathology.

The action of the superior oblique muscles pulling on this inflamed, thin floor of the frontal sinus through the attachment of the pulley causes an increase of pain on reading which is frequently mistaken for an error of refraction. The superior oblique muscle intorts, depresses and abducts the eye ball in reading. This abduction must be overcome by the action of the strong internal rectus muscle in reading. This counter-pull increases the effort of the superior oblique muscle which increases the pain due to the increased traction on the pulley.

The prognosis of these cases is relatively good when properly treated. The treatment resolves itself into the removing of the obstruction of the fronto-nasal duct.

The treatment is purely surgical in all chronic cases, while the acute cases respond

to the proper medical treatment. The Rhinologist determines just what treatment is necessary, by recognizing the class to which the particular case belongs.

In the acute cases a cleansing alkaline irrigation, with frequent sprays of adrenalin chloride and hot applications to the frontal sinus region supplemented by steam inhalation of compound tincture of benzoin will usually effect relief in a short time.

In chronic cases all deflected septa should be corrected. All nasal polypi should be removed. All hypertrophied uncinated processes and bulla should be curetted, and those cases with a narrow nose and abnormal cavernous tissue of middle turbinate, should have the anterior third of the middle turbinate removed, thus giving ample space to the vault of the middle meatus.

SPHENO-PALATINE GANGLION NEUROSIS.

In taking up the study of sphenopalatine ganglion neurosis, I think a study of gross anatomy will help us in the understanding of the many seeming complex symptoms which are found in this condition.

The sphenopalatine ganglion is a small triangular, reddish-grey body situated in the upper portion of the sphenomaxillary fossa. It lies in close proximity to the sphenopalatine foramen, and just beneath the maxillary nerve. This sensory root has two or three filaments which pass from the maxillary nerve to the ganglion. Some of the fibres of this root are the dendrites of the gasserian ganglion. The motor root is the great superficial petrosal root which rises from the facial nerve in the facial canal. Here the great superficial petrosal nerve is joined by the sympathetic root, the great deep petrosal, which is a branch of the carotid plexus. The two great petrosal nerves fuse and form the vidian nerve which enters the sphenomaxillary fossa to join the nasal ganglion.

It can be seen from this brief description that the ganglion has vital connection with the facial nerve, the fifth nerve and its branches, and the sympathetic nerves of this region. This ganglion is so located that it can be easily effected by the various conditions of the upper air passages, owing to its close relation to the wall of the nose.

It lies at the upper margin of the sphenopalatine foramen, which is closed by a layer of mucous membrane. The symptoms of this neurosis are divided into two great classes, those which are neuralgic or painful, and those which are sympathetic

symptoms. The symptoms are characteristic of a neurosis of other parts of the body which are manifested by pain fleeting from place to place with no definite location. A pain at the root of the nose, in or about the eye, upper jaw and jaw-teeth, extending backward to the temple, to the ear, making earache, emphasized one inch back of the mastoid process, or even back to the occiput and neck, or in severe attacks, down to the forearm and hand, are symptoms which will justify a diagnosis of sphenopalatine ganglion neurosis, especially if we have interference with the sense of taste. Sympathetic symptoms are vasomotor and secretory. It is difficult to separate these symptoms, because the sympathetic plays a prominent part in the pain symptoms also.

This sympathetic irritation causes coryza, paroxysm of sneezing, hay fever or even asthma. The eyes become reddened, profuse flow of tears, and itching and burning accompanies the lachrimation. These symptoms are the result of irritation of the nerve endings located in this region. One point we should always keep in mind in making a diagnosis of these ganglionic neuroses, is the shifting of the pain from place to place, and the mucous membrane irritation of the nose, and the conjunctiva.

The prognosis of this form of headache is not as favorable as that of the vacuum headaches, because of the various ramifications of the nerves connected with the ganglion. If a lesion is of the ganglion proper, or of the trunks distal to the ganglion, treatment can be very easily instituted. But if the lesion is central to the ganglion, it makes the treatment much more difficult, except in the vidian nerve which becomes inflamed from an empyema of the sphenoidal sinus. The treatment is both medical and surgical, but the medical treatment is more important. Local applications of cocaine, diluted solutions of phenol to the mucous membrane surrounding the sphenopalatine foramen will frequently relieve these patients for months, and sometimes effects a cure. If the local applications do not relieve the condition, Sluder recommends injections of phenol and cocaine with a long straight needle or a slightly curved one, into the ganglion or infiltrated around the ganglion. We should remove all pathology which interferes with the normal functions of the nose. This procedure will effect a cure without further treatment in a number of those cases which are thus complicated.

The results of the removal of the sphenopalatine ganglion have been disappointing.

There is another division of nasal headaches of which I will only mention. That is the hyperplastic sphenoiditis. I mention this because the vidian nerve becomes involved in this condition which brings on an attack of ganglion irritation as described above. This form of neuralgia will not be cured by local applications to, or injections into the sphenopalatine ganglion, because the lesion is central to the ganglion. To treat this condition, a treatment for the sphenoidal sinus inflammation must be instituted, which may be an irrigation of the sinus, or the removal of the anterior sinus wall, as the severity of the pathology may require.

In conclusion, I will say, that a little time spent in careful investigation by the physician, into the history and symptoms of the attacks, he will be able to diagnose these cases, and recommend the proper treatment for the same, thus relieving their patients of much suffering and annoyance.

SPHENO-PALATINE GANGLION HEADACHES.

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The rhinologist is confronted with a perplexing problem in diagnosing and treating the various types of headaches. Nasal headaches vary in degree from a mild form to the type described as migraine and sick headache, and may occur at irregular or frequent intervals extending over a period of years. The patient suffers greatly and the daily routine is sometimes interfered with to such an extent that it is impossible to carry on the usual vocation. Such headaches are too often described as neurotic and temporarily relieved by some analgesic. Careful investigation of these cases will show that they belong to the group described by Sluder as sphenopalatine headaches.

The sphenopalatine ganglion, Meckel's or nasal ganglion is a rounded triangular ganglion lying in the pterygo-palatine fossa close to the sphenopalatine foramen. It is suspended loosely from the trunk of the maxillary nerve by the (second and third) sphenopalatine nerves, which form its sensory root. In addition to this main root it receives a second, the nerve of the pterygoid canal (Vidian nerve), which passes through the corresponding canal of the

pterygoid process of the sphenoid, and really consists of two nerves usually very closely united in their course through the canal, one of which is the motor, the other the sympathetic root of the ganglion. The motor part of the nerve is the greater superficial petrosal nerve, a branch of the geniculate ganglion of the facial nerve. The second component of the nerve is the sympathetic root of the ganglion and is known as the deep petrosal nerve. The greatest dimensions of the sphenopalatine ganglion is a little more than 5. mm.

The branches of the sphenopalatine ganglion are:

1. Small orbital rami to the orbit.
2. Posterior superior lateral nasal rami supplying the mucous membrane of the superior nasal meatus, superior and middle nasal conchae, also part of the membrane of the sphenoidal sinus and posterior ethmoidal cells.
3. Posterior superior medial nasal rami which supplies the mucous membrane of the septum in conjunction with the nasopalatine (Scarpa's) nerve.
4. The posterior inferior nasal rami supply the posterior part of the lateral wall of the nose.
5. The palatine nerve is divided into anterior, middle and posterior supplying respectively the mucous membrane of the hard palate, palatine tonsil and the uvulae (Sabotta).

Unfortunately the various text books do not explain the relation of the ganglion to the surrounding structures such as the necessary sinuses. In order to become more familiar with such relations one should carefully consult the studies made by Sluder.

The etiology has been attributed to foci of infections and metabolic disturbances. Sluder and Pollock attribute the condition to local and inflammatory disturbances in the region of the ganglion. In my experience this cause has predominated.

The affection is divided into two great classes; the neuralgic and the sympathetic. The symptoms of the neuralgic class consist of severe pain extending to any and all points supplied by the branches of the ganglion. The usual location of the pain is in and about the eyes, radiating to the temple, behind the ear and frequently into the neck. Occasionally the pain extends to the occiput and the tonsillar region. In some cases the pain extends to the teeth, and many needless extractions have been made as the result of a hasty diagnosis. In one of my cases the patient had all of the

upper teeth extracted in order to gain relief, but the pain persisted.

The sympathetic group is characterized by sneezing and lacrimation plus the severe pain which has been described under the neuralgic group. The attacks occur during any period of the year and are not associated with the ripening of pollens. The patient may sneeze four or five times but it is not uncommon to exceed twenty or more. The nasal membrane becomes swollen and difficult breathing is soon noticed. The eyes are usually red and the conjunctiva is injected. In a few cases I have known the symptoms to last for a period of one week, during which time the patient was never free from pain, and was subject to repeated attacks of sneezing.

The appearance of the nose between attacks is usually normal. The secretion is thin and watery, and may be so profuse as to cause excoriation of the upper lip.

It is not within the scope of this paper to state why some cases present symptoms of the neuralgic, and others, symptoms of the sympathetic group. Hunt states that the peculiar phenomena occur in other ganglion, as for instance the lenticular ganglion.

In the diagnosis of sphenopalatine headache it is practically impossible to reach an absolute diagnosis unless the patient is seen during an attack and relieved following an application of cocaine to the region of the sphenopalatine ganglion. Migraine and headaches of other types may be slightly relieved following the use of cocaine in the nose, but the true sphenopalatine headache is immediately relieved by the above mentioned procedure. In order to rule out neurotics and feigners an application of sterile water is used in the place of cocaine.

The prognosis in sphenopalatine headaches is bad if they are untreated, but excellent results can be obtained if the cases are carefully studied and the proper treatment instituted. Even though the symptoms recur within a period of three to six months, the patients are grateful for the temporary relief.

In the treatment of these cases all pathologic conditions of the upper respiratory tract should be corrected. Various remedies and surgical means have been employed in the treatment of this affection. Barlow reported excellent results following the application of silver nitrate solution to the area surrounding the ganglion. The efficacy of alcoholic injections of nerves was established by the animal experimentation of May, who showed that in-

jections do not completely destroy the nerve fiber and cells, as they recover their function a few months later. The function of the nerve is inhibited, and during that period the symptoms cease. If the headache responds to the application of cocaine to the region of the ganglion good results can be expected following an injection of alcohol. I employ the technique as described by Sluder: The posterior end of the middle turbinate is first cocaineized by means of a cotton applicator saturated with a twenty per cent solution of cocaine. Then a sword needle about five inches long, is introduced from the septal side of the nose passing through the posterior end of the middle turbinate. The needle is pushed upward, outward and backward through the bony wall which serves as the anterior boundry of the sphenomaxillary fossa. One can feel the needle slip into the cavity after passing through the bony wall. A syringe filled with alcohol or a two per cent solution of phenol in alcohol is injected. The average amount injected varies from five to fifteen minims. The ganglion may be penetrated by the needle and a sharp pain is felt. In the majority of cases the ganglion is only bathed by the solution injected. The pain following the injection may last for a period of a few minutes to twenty-four hours. In cases where the ganglion is penetrated or thoroughly bathed one injection will suffice. In one of my cases it was necessary to make three injections before relief was secured.

CASE HISTORIES.

Case 1. Miss M. C., aged 38, consulted me in December, 1921, on account of severe headaches beginning in the frontal region and extending to the occiput. The patient complained of frequent headaches associated with sneezing spells, which were followed by watery discharge from the nose. The attacks began about one year ago and have gradually increased in frequency, often occurring daily for a period of one week. Examination of the ears, nose and throat were negative. Vision and fundus normal. General physical examination including laboratory examination of blood and urine was negative. Cocaine applied to the region of the sphenopalatine ganglion gave the patient immediate relief. The ganglion was subsequently injected with phenol-alcohol solution and the patient has been free of all headaches.

Case 2. Mrs. J. B., aged 42, was examined in January, 1922. The patient complained of headaches beginning in the nose,

extending to the eyes and frequently involving the mastoid region. At times the pain was noticed in the roof of the mouth. The headaches began about two years ago and the attacks have gradually increased in frequency. The attacks frequently last for a period of two or three days during which time the patient is never entirely free from pain. Opiates were used by attending physician during several attacks with only temporary relief. General examination including eye, ear, nose and throat was negative. Following the injection of the ganglion the patient complained of severe pain lasting for a period of six hours. The following day the headache failed to recur, and with the exception of one mild attack about four weeks later the patient has been free from pain.

Case 3. Miss M. T., aged 27, was referred to me on account of headaches. About nine months ago the patient began to have severe headaches which occurred at any period during the day. Prior to the onset of pain the patient would begin to sneeze. This was followed by a watery discharge from the nose, at times very profuse. The attacks gradually increased in severity and frequency until the patient was frequently confined to bed for a period of one to two days. The pain first began in the back part of the nose and eyes, later extending to the side of the face, occiput and tonsillar region. At times the patient felt a shooting pain in the teeth and four extractions had been made without relief. Examination of the eyes, ears, nose and throat was negative. General physical examination including laboratory examination of the blood and urine was negative. Following one injection of the ganglion the patient was relieved.

CONCLUSIONS.

The sphenopalatine ganglion headache is a clinical entity.

The diagnosis is easily made following the application of cocaine to the region of the ganglion.

Feigners and neurotics are readily ruled out by means of a sterile application of water to the ganglion.

The injection of a solution of phenol in alcohol is the treatment of choice.

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TRACHOMA.*

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This disease should receive more than passing notice from all medical men on account of its prevalence among the indigent population of our state, and on account of the certainty that it is the cause of many cases of blindness which will sooner or later become a charge on the community or state.

Every practitioner should be alert to recognize the early symptoms of the disease and either give or direct them to competent aid that relief may be had before irreparable damage has been done to the vision, and many additional infections developed from the patient not knowing his condition or that he is distributing a very serious disease to those with whom he comes in contact.

Trachoma should be recognized before it has made the inroads on the victim to the extent of heavy scarred furrows in the conjunctivae and cupped tarsal cartilages which resemble a piece of old dried leather in elasticity, with the border of the lids turned in and acting as a scraper on the cornea and which is constantly destroying the corneal surface and developing a panus which forever more or less impairs the vision.

In the early stages it will be recognized by the general weak-eyed aspect of the patient as he presents himself for examination, having excessive lachrymation with often a muco-purulent discharge, and on inspection the conjunctiva will be found very hyperemic with the adenoid layers thickened and spongy, papillae elevated and tense, with the trachomatous granules lying in the spaces between the papillae, showing a slightly yellowish cast and the whole area often bathed in a slightly grayish clinging exudate.

In Egypt it is said that more than eighty per cent of the population is infected with

trachoma and they have lived in this condition for many years. This seems to be the most prolific source from which the infection reached the European countries. Through the medium of Napoleon's army which came out of Egypt with seventy per cent infected, the disease was spread throughout Europe and since that time it has been trickling into the United States through European immigration until now we have an ample supply from our own sources which are scattered throughout the entire country.

It has been reported that eighty per cent of the Indian population of Oklahoma is infected with trachoma. I think this is exaggerated to some extent from my observation of the Choctaws among whom I have lived for twenty-five years. But even fifty per cent or forty per cent would be a very serious condition to exist within our state, and one which calls for active interference or we may have a hot-bed in our midst equal to that of Egypt.

Many methods of treatment have been devised and used from the old painful and efficient pencil of copper sulphate to the up-to-date radio-therapy.

The bluestone pencil has been the means of blotting out a great many trachomatous granules and of course leaving after it in many cases rough scars to keep up the impairment of vision. But they are responsible for eliminating many sources of infection which could have been multiplied into many hundreds of cases had the pencil not been used.

Next came the mechanical treatments such as grattage and forceps compression which has the same objection that scars so often follow their use, but they too have served a good purpose and their use has checked a great many chains of infection.

Resection of the tarsal cartilages has given relief to some of the victims, and it too has had some setbacks on account of the ultimate results of deformity which follows in some cases.

The Tarsal Massage treatment as advocated by Dimitry of New Orleans, has some things in its favor. The treatment consists of squeezing out the contents of the granulations by compressing the everted lids between the thumb and a roller made of a metal rod above five or six millimeters in diameter on which is wound a small amount of absorbent cotton which is made firm by saturating with a solution of boric acid or 1-5000 bichloride.

The patient is anesthetized, the lid

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everted, and the process of ironing-out as it were, the entire trachomatous surface by pressure against the thumb and a rolling motion of the padded rod. By this process you are able to leave the surface in good condition with minimum traumatism for the production of the troublesome scar tissue which so often follows many of the other methods. In addition to the squeezing out the contents of the trachoma bodies with a minimum damage to the conjunctiva, we are able at the same time to soften and make pliable the hardened tarsal cartilages by repeatedly rolling the folded lids under pressure in all directions until they are soft and pliable, and thereby relieving that source of trouble for the time being at least, and if there should be a trace of the trachoma left which begins to show up afterwards, the treatment should be repeated in a thorough manner.

When I first used this method, it was under local anesthesia that I would undertake the treatment, but on account of the liability to give the patient severe pain, I would often not do the job as thoroughly as it should be done and it required repeated sittings in order to clear up all the area involved, but with general anesthesia you are able to do the work well and often complete the job with one operation and give your patient relief for many months if not at times to give permanent relief.

I have had pannus to clear away entirely in a short time after a thorough massage with this method and the patient to be entirely relieved of his trachoma.

This paper is written only with the idea that the discussion by the advocates of the different methods will broaden our conception of this menace and put some "pep" into the subject of the much-talked-of "granulated sore eyes."

Discussion: DR. CHAS. B. BARKER.

In the treatment of trachoma, there is no one drug or method that seems to fit every case, and I believe there are many cases that are overtreated, *i. e.*, too strong drugs, and too much scarifying. The whole treatment, both medicinal and surgical, sums itself up into the amount of stimulation, which the case in hand demands, and quite often the amount of stimulation required for the lids, produces deleterious effects on the cornea, which should be considered in every form of the treatment.

The granulation tissue in trachoma is first and most frequently localized in the

area of the conjunctiva where the excretory ducts of the lachrymal glands empty, and it has been found that the disease diminishes in proportion to the diminution of the amount of the secretion of the tears and the best drug for lessening the amount of secretion in trachoma is an application of silver nitrate, well up into the fornix, and where the excretory ducts of the lachrymal glands empty.

Some cases seem to be self-limited, due to the fact that these ducts are closed, by the cicatricial tissue, resulting in a greatly diminished secretion of tears. If the eye is not too moist, copper sulphate stick well up in the fornix, with hot bichloride of mercury irrigations, are indicated. When the tarsal cartilage becomes broad and thickened and cardboard like and causes constant irritation of the cornea, a tarsectomy gives very gratifying results.

THE EARLY DIAGNOSIS OF INTRACRANIAL INVOLVEMENT OF OTITIC ORIGIN.

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Owing to the time limited for this paper our discussion will be limited to meningitis and brain abscess.

Knowing that most infections of the intracranial structures are the result of a direct invasion by the pathogenic organisms from the middle ear or mastoid we can readily appreciate the probability of meningeal pathology preceding that of abscess formation.

The early symptoms of meningitis of otitis origin are in many respects no different from those of meningitis from other causes and some of the methods employed in making a diagnosis will be applicable as well to meningitis from other sources.

I take it for granted that you are familiar with the clinical picture of a well developed case. The mental disturbance, high fever, severe headache, choked disc, Kernig sign, posture of the body, Babinski's sign, Cheyne-Stokes respiration, etc. There must be, however, in the development of meningitis an early stage when these signs and symptoms are not present.

Kopetsky considers the signs and symptoms of meningitis to be due (1) to an increased intracranial pressure and (2) to the bacteria and their toxins together with a disintegration of nerve tissue.

Let us classify meningitis of otitis origin as either circumscribed or diffuse, either of which may be serous or purulent.

Of the symptomatology of the circumscribed form very little can be said, the diagnosis is usually made on the operating or post-mortem table. However, there are certain signs and symptoms when present that justify a diagnosis. A localized headache in the temporal region rather than a severe pain in the ear, together with a tenderness over the Zygoma or post-mastoid region, occurring in the course of an acute otitis media or an acute exacerbation of a chronic otitis media is a fair indication that there is some meningeal involvement.

The path of infection in these cases is usually through the labyrinth, either directly through the internal auditory meatus, or through the aqueductus vestibuli or aqueductus cochleae. Any involvement of the labyrinth will cause a nystagmus. In the beginning it may be directed toward the infected side, that is, if the lesion is only irritative in character. As the labyrinth becomes more generally involved the process passes from an irritative stage to one of paralysis. At this point the nystagmus is distinctly towards the sound side. As soon as the process passes beyond the labyrinth, that is, as soon as there is a meningeal involvement which will cause an irritation along the vestibular nerve there will be a rapid return of the nystagmus to the involved side. This is not a difficult sign to elicit and is one for which we should look in all cases of acute middle ear infections.

Many cases of the circumscribed form of meningitis show no definite or localizing symptoms until the barrier formed by nature is overcome and the condition becomes diffuse.

Whether the diffuse form is serous or purulent depends largely upon the virulence of the infecting organism and the resistance of the patient to its invasion.

The bacterial invasion of the tissues of the central nervous system will consume all of the available carbohydrates present in the cerebro-spinal fluid. This can easily be determined by making the copper reduction test which will be found negative except in the slowly developing cases of tubercular meningitis. The disappearance of the carbohydrates from the cerebro-spinal fluid is a very early sign of bacterial invasion of the central nervous system and has been found constant in all cases examined.

In cases with meningeal symptoms such as the meningeal signs of pneumonia, typhoid fever, general sepsis, etc., where there is no direct invasion of the central nervous system, the sugar reaction will be positive. Thus an easy means of differential diagnosis is afforded.

At the same time when we find an absence of sugar in the cerebro-spinal fluid, we find varying degrees of acidity and the presence of lactic acid. This is due to an acidosis of the tissue, the cause of which is problematical. There will also be found an increase in the amount of albumin together with an increase in the potassium salts and a decrease in the sodium salts.

Early in the disease there is an increase in the amount of cerebro-spinal fluid, thereby causing an increase in the intracranial pressure. This in turn causes a strangulation of the blood vessels of the optic nerve which gives an ophthalmoscopic picture fairly constant and highly significant. There is a swelling of the papilla and a blurring of the outer margin of the optic disc. This is an early sign and should not be confounded with the choked disc found later in the disease.

When the intra-cranial pressure reaches a certain point and there is an encroachment on the vital centers, the fight for existence starts, manifested by signs from the respiratory, vasa-motor and Vagus centers. One of the manifestations is a progressive rise in blood pressure. This should be taken hourly during the early stages and recorded. After paralysis of the vital centers begins the blood pressure estimations lose their value.

An examination of the blood is frequently of value. As a rule a high leucocytosis will be found and a decided increase in the polymorphonuclears—85-90%.

Neuro-muscular symptoms often appear early in the disease, *e. g.*, we may have a contracted pupil on the affected side and not infrequently a paralysis of the sixth cranial nerve on the corresponding side causing an internal strabismus. Stiffness of the neck is an early neuro-muscular symptom occurring in both adults and children but more especially in infants. An exaggerated patellar reflex is next in importance as an early sign. Many other signs and symptoms are present later in the disease but are of little value in making an early diagnosis.

Unlike most cases of meningitis and brain tumor that produce an increase of intra-cranial pressure by an increase of the

substance within the cranial cavity, brain abscess is a destructive process and replaces normal structure so that unless there is obstruction of the circulation of the cerebro-spinal fluid or an occlusion of some fistulous tract that is draining the purulent secretions there will be no increase of intra-cranial pressure, hence the lack of such symptoms are only of negative value.

Brain abscess is essentially an acute condition although it may pass from acute to a chronic stage with very little symptomatology and remain undiagnosed until some acute exacerbation or extension of the process changes a latent condition to one of activity with manifest symptoms.

The initial stage is frequently passed unrecognized, the symptoms being obscured by the ear involvement. When marked the initial stage will show symptoms of intracranial involvement due to meningeal irritation.

The latent stage may or may not show a definite symptomatology. During this stage there will usually be some disturbance of the sensorium manifest by stupor, restlessness, dullness, lethargy, drowsiness, somnolence, apathy, indifference, change in disposition, insomnia, delirium, etc. Headache accompanied by a slight rise in evening temperature may be the only symptom. During this stage periods of remission occur when the patient is in apparent good health. This period varies from a few days to many years and may gradually or suddenly pass into the manifest stage which presents a more definite clinical picture.

During the manifest stage one or more of the following symptoms are present from which we make our diagnosis:

A relatively slow pulse although by no means constant is of diagnostic importance. Vomiting is probably not a symptom of brain abscess *per se*, but a manifestation of meningitis especially involving the basilar meninges, therefore we should not look for this symptom early in the disease. Its absence is of no significance while its presence probably means an associated meningitis and an unfavorable prognosis.

In temporo-sphenoidal abscess symptoms of aphasia are common. In the cerebellar we are more likely to have nystagmus and symptoms of inco-ordination.

The blood picture in acute cases is that of a purulent formation while in the chronic cases there will be but a slight increase in the cell count.

The cerebro-spinal fluid is usually under slight pressure but clear until its cellular contents have become markedly increased from a purulent meningitis or rupture of the abscess into one of the ventricles.

There is no one symptom or group of symptoms pathognomonic of the disease. There are no symptoms that may be definitely stated as early manifestations. In children practically all the symptoms may be present in an uncomplicated case of acute otitis media, therefore the diagnosis is exceedingly difficult in the presence of the original focus of infection. If the symptoms continue after the original focus of infection has been removed then and only then are we reasonably sure of our diagnosis.

After we have made a diagnosis of brain abscess we attempt to localize to some particular area. This again becomes in many instances a difficult matter—however, there are certain signs and symptoms that are common to certain areas and are presented as follows:

In cerebellar abscess the mentality is less affected—there is no delayed cerebation. Optic neuritis, choked disc, abducens and motor oculi paralysis are more common in the cerebellar. Lack of muscular tone and weakness on the same side as the lesion in cerebellar—on the opposite side in temporo-sphenoidal.

Both upper and lower extremities involved in the cerebellar—usually only the upper in the temporo-sphenoidal.

Aphasia of both motor and sensory type is more common in the temporo-sphenoidal. Disturbances of speech in the cerebellar present bulbar characteristics. Conjugate deviation of the eyes and nystagmus together with ataxia is indicative of cerebellar. Inco-ordination and a tendency to fall in a definite direction suggests the cerebellum as the site of the lesion. In a right sided cerebellar abscess, *e. g.*, the right arm deviates outward or to the right when attempting to make contact with a stationary object with eyes closed. We also use this pointing test to differentiate the cerebellar lesion from labyrinthine involvement. In a normal individual if the left ear is douched with cold water, both right and left arms will pass a point to the left while in a right sided cerebellar abscess the left arm will go to the left but the right arm continues to deviate to the right. If there is labyrinthine involvement there will be loss of vestibular reaction when the test is applied to the diseased ear. Stiff-

ness of the neck is more common in the cerebellar and the headache is more highly intensified upon the slightest movement.

In conclusion, let us summarize the most important of the early symptoms of meningitis:

If the path of infection has been through the internal ear and the labyrinth has been affected our first indication of a meningeal involvement will be a change in the direction of the nystagmus. In cases where there has been no labyrinth involvement we find a progressive increase in blood pressure as the first significant sign. The early ophthalmoscopic picture is next in importance. The early neuro-muscular symptoms together with a careful examination of the cerebro-spinal fluid will complete our determinations. A negative sugar reaction, an acid reaction to litmus, the presence of lactic acid and albumen, an increase in potassium salts, supplemented by a bacteriological examination will confirm our diagnosis of meningitis long before many of the classical signs and symptoms become manifest.

We are disappointed in not being able to present certain signs or symptoms as early manifestations of brain abscess. However, I do emphasize the importance of a careful and accurate history regarding chronic ear and sinus infections, periodic headaches and sensorial changes which may lead us to a correct diagnosis in an otherwise obscure case.

SYPHILIS OF THE INTERNAL EAR.

W. T. SALMON, M. D.,
Oklahoma City.

It is my pleasure to present for your consideration one of the richest rewards which the delvers of the obscure have given to the otologist within the last century.

Located as it is, occupying such a tiny space, in a bone so securely hidden, and surrounded by such vital structures, it is not surprising that the inner ear remained, for so long a time, a mysterious field where only the bold dare to penetrate.

Instead of being one organ, it is now definitely settled that the inner ear is composed of two parts whose functions are entirely distinct; the cochlea is the organ of hearing and the kinetic static labyrinth, consisting of the utricle, saccule, and three semi-circular canals with its nerve pathways connecting it with the nerve centers in the brain is the organ of equilibration.

Too much credit can not be given to the research workers, who, by their arduous labors, have given to the world that enlightenment that makes this a field in which the ambitious may not venture.

It has been pointed out on numerous occasions the credit that is due Robert Barany for his untiring zeal in developing the knowledge he has furnished on the labyrinth for which his contributions brought him the Noble prize.

While this information makes it much easier to diagnose the lesions that may occur in the labyrinth, syphilis, upon the other hand, while one of the oldest and most familiar diseases with which the physician has to deal, is often so elusive that it leads us far astray. Especially is this true of syphilis of the internal ear as we must be guided by symptoms that might result from various and sundry diseases.

Syphilis cannot reach the labyrinth or brain except through the blood and other fluids of the body but it often does without any other symptom except the initial sore which may heal without treatment or recognition. Dr. Archibald Church, whose estimation is based on clinical histories and by objective signs, both in private and hospital practice, indicates that about 20-25 per cent of all adult males are syphilitic, or that one man in every five have syphilis in some form.

It would be interesting to know, if it be true that so many are syphilitic, what per cent of them have or will develop syphilis of the nervous system and still more interesting to know exactly what per cent have or will have syphilis of the labyrinth and its connections.

Owing to the improved method of diagnosis this condition is thought to be much more prevalent than was formerly supposed, and a deafness without an apparent middle ear trouble, showing a marked shortening of bone conduction should at least be put down as a suspicious case.

It has been estimated, by those who speak with authority, that children who suffer from congenital syphilis usually have a loss of hearing and that from 33-60 per cent of them have neuro-labyrinthitis.

Regardless of whether syphilis is hereditary or acquired, there is a group of symptoms that may be called classical that will assist in the diagnosis when the inner ear is involved.

For some reason, that has never been satisfactorily explained, possibly from lack

of neurilemma, the eighth nerve is attacked more frequently than any other cranial nerve, and as the cochlea portion seems to be more vulnerable than the vestibular portion is an explanation why the first symptoms the patient will notice will be tinnitus and loss of hearing. The tinnitus is abrupt in its onset and is most severe in the beginning of the disease and whether or not it is affected by the treatment it grows less as the destruction of the nerve progresses.

In the hereditary syphilis the loss of hearing may be gradual, sometimes extending over a year or more. However, there are recorded cases where children have lost their hearing over night. I am of the opinion that if the truth could be known of these cases, they were neglected with the usual symptoms coming on gradually and extending over several months, which the parents failed to recognize.

In the acquired syphilis, the hearing may be lost in a gradual way, but this is the exception, and as a rule the history of most cases will show that the hearing was lost suddenly or at least within a few days.

It should be called to your attention here that there are a variety of diseases that may cause the sudden loss of hearing and that a diagnosis should not be made upon this one condition.

But you should bear in mind that the course of the acquired form is rapid, and if rational early treatment is not given, it results quickly in irreparable damage either to the hearing or to orientation or most usually to both.

Any of these cases may have otitis or any other complication, which must receive due consideration, but it is not the intention of this paper to dwell on these conditions but rather to present for your consideration the conditions that arise in unimixed syphilis of the internal ear.

Syphilis may affect the inner ear alone, or the eighth nerve alone, or both combined, or it may affect the cochlear portion or the vestibular portion of the nerve alone, thereby giving you tinnitus and deafness in the one and a disturbance of the equilibrium in the other. In a vast majority of cases the nerve is affected before the labyrinth.

In some cases of syphilis of long standing it may be found that the patient is suffering from vertigo, sometimes falling, nystagms, and past pointing while the hearing may be normal or nearly so, in which case we know that only the vestib-

ular portion of the eighth nerve is involved. In these cases, the turning and caloric tests may be negative, but with these symptoms, with other diagnostic aids, we may be able to prove the case.

Fraser has stated that his investigations lead him to believe that many cases of congenital deaf-mutism were due to intra-uterine syphilis or to syphilitic changes in the ear occurring before the child learned to talk. Aside from the congenital form, meningitis, mumps, measles, and scarletina, in the orders named, are usually given as the cause of deaf-mutism, but it has been pointed out that many of these cases, that are not congenital, have no explained origin and that about 30 per cent of this class show a plus Wasserman reaction.

Beside the evidence of the Wasserman reaction, there may be noticed in the congenital cases, the Hutchinson teeth, keratitis, or the scars from an old case of keratitis, a child with the old appearance that is so characteristic of syphilis, and the parents in presenting the history of the case will lay great stress on the catarrhal condition of the nose and often of the ears. In fact, this history and the otoscopic appearance may mislead the otologist.

We must depend much more upon the knowledge gained from functional tests than from the history given as the victims are usually ashamed to confess a disease that bears a stigma of sin. Especially will this be true if the patient is a child, as they can not furnish a true history, and the parents are inclined to conceal their guilt.

The patient is often driven to consult the physician from the distressing vestibular symptoms, and if there is not great loss of hearing with the vertigo, they may not associate this symptom with the ear.

Upon examining these patients, we may find spontaneous nystagmus with the locomotion uncertain, associated with a spontaneous pointing error which may, from time to time, improve with the tinnitus.

The fibers are incapacitated by pressure when the infiltration of the nerve is great, which makes the symptoms more pronounced, when the pressure is reduced by the absorption of the infiltration the past-pointing and tinnitus may also disappear and the patient seem almost normal, which should not deceive the physician as the treatment should be energetic to prevent the recurrence of these symptoms.

The symptoms caused by syphilis of the inner ear may be unilateral or bilateral, but upon close examination, it may be

found that the hearing is deficient in both ears but more marked in one than the other.

A very careful consideration should be given the Weber, Schwabach, and Rinne tests for the cochlear portion and the turning, coloric and electrical tests with their reactions upon the vestibular portion.

The turning and coloric test each has its advocates, but if either is systematically carried out, will furnish valuable information. The greatest objection to the turning test is that both ears are affected at the same time while coloric test gives you information of only the ear under test. The only real valuable use for the galvanic is that in spite of the inner ear being destroyed, the eighth nerve may respond to its stimulation which is an evidence as to the seat of the lesion.

It is a remarkable fact that in almost 100 per cent of cases with enetic infection, there will be a marked shortening of bone conduction. This may be noted as early as the seventh day after the infection, but Beck has noticed that in those cases that have a well developed skin eruption and other secondary manifestations, the bone shortening is less liable than in those who have had only the primary sore without the secondary symptoms.

George H. Wilcutt says that the bone conduction is due to the toxins in the blood stream. Others believe it to be due to a meningitis caused by an increase in the blood pressure, and have offered as an evidence, the lengthened bone conduction just after a spinal puncture.

With the tuning fork placed on the vertex in some cases there is almost an absence of bone conduction. A shortened bone conduction, unless the patient is beyond fifty years of age, associated with deafness, should be regarded with suspicion.

There may be intermittent places in the perceiving apparatus where the tuning fork may be heard better than at other places but usually there is a marked lowering of upper tone limits so that the high pitched tones are badly heard while the low pitched tones may be heard with ease.

In this form, as in other cases of syphilis, we must search for any other symptom that might assist in the diagnosis. Sometimes the seventh nerve, or the third or sixth nerve may be involved, or there may be pupillary or optic nerve changes, or anaesthesia, hyperaesthesia, loss of deep reflexes, etc., may be found.

No investigation is thorough without a complete laboratory report, but we should remember that in spite of a negative Wasserman and spinal fluid, the pathological changes responsible for the loss of hearing, may point to syphilis.

The prognosis in the hereditary form is always grave and the same may be true in the acquired form unless appropriate treatment is instituted at the early stage before injuries to the structures compressed become well advanced. However, there are some who have reported cures after six years of continued treatment. This would seem impossible when we remember that only the specific lesions that are the result of the toxine of syphilis will respond to antisyphilitic treatment, while the cicatrices and bands of contracting cicatricial tissue and adhesions which are the results of luetic inflammation may not be influenced by treatment.

The prognosis is more favorable in those who have had an extensive eruption than in those that have had no secondary symptoms.

Dr. George W. Mackenzie affirms that an active syphilitic lesion of the inner ear or eighth nerve is just as responsive to antiluetic treatment properly selected and early begun as the same type of lesion located in any other part of the body.

I believe that there is a unanimous opinion that in the treatment of syphilis, in any of its various presentations, mercury and iodides should be our sheet-anchor, but we are not agreed as to the methods of administering them. This may be accounted for in the idiosyncrasy of the patient, the size of the doses, the time and frequency of giving them, and the many different phases in which this disease presents itself.

While I shall not attempt to say that any method is preferable to another, I do insist that they must be given and given rapidly, and that iodide of potash, given in heroic doses, often yields a better result, until certain stages are passed, than any other remedy given.

There was a time when to mention the administration of arsphenamine, would arouse a storm of opposition by those who believed that the remedy caused the nerve lesion more often than the disease. Many of you may remember, there are books still extant, which will show that the same battles were fought over the treatment with mercury. I can recall when men broke their arms in some slight way, such

as throwing a ball, it was attributed to the mercury they had taken. We now know that it was the disease and the lack of a remedy to arrest it that produced the fracture.

Judging by the statistics that have been given us upon this hearing, I believe that history has repeated itself and that the neuritis was caused by the disease, which might have been arrested by a more judicious administration of arsphenamine, as the same manifestations have occurred under treatment with mercury.

So far as is yet known, such nerve lesions are not recorded in the giving of arsphenamine in diseases non-syphilitic. Many cures have been recorded where there had been a long and repeated treatment with arsphenamine.

It is not my intention to present to you a long line of dry statistics which have been compiled as evidence which favors the administration of arsphenamine, but I shall call to your attention that this is emergency treatment, and we want a remedy that may produce results almost instantly and when I recall the testimony of one, corroborated by hundreds of others, the marvelous results produced by one dose of arsphenamine, I am afraid not to give it.

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REMOVAL OF INFECTED TONSILS EARLY IN LIFE.*

T. W. STALLINGS, M. D.,
Tulsa, Oklahoma.

The tonsils being a part of the general lymphatic system and reaching the height of their functional development early in life, are subject to early infection. They are conveniently located on each side on the pharyngeal wall where the respiratory tract crosses the digestive tract. Usually the first infection that a child has to overcome is that of the digestive tract while the various infections of the respiratory tract are seen very early in life.

The tonsils are connected with the general lymphatic system and are ductless and take part in all general inflammatory processes affecting the whole blood or lymphatic system.

Since tonsillar infections are seen very early in life and because of the close functional relationship of the gland to the lymph stream, the organism very early acquires an entrance to the general circulation. In the case of the streptococcal infections the organism tends to persist in the gland in a virulent form after the actual inflammatory symptoms have subsided, regenerating rapidly when a period of lowered resistance occurs. Hence, a child whose first tonsil infection is first seen at the early age of a few months to a few years, often will have repeated attacks of tonsillitis for the next years to follow, and the glands are never quite free from the signs of the inflammation.

The physiological activity of these glands is greater in youth and the proliferating processes brought about by the infection cause the first signs of the gland's enlargement, which in some cases continue to the point of mechanical obstruction of the tract, followed by the numerous changes in the face and the chest of the child because, as we think at this time, due to the purely mechanical obstruction offered. That general infection does occur very early has been shown in some cases by blood culture in children, both before and after development of lesions of the mitral valve. The mitral lesions of youth are most often caused by the same strain of streptococcal germs found in the tonsils. Many of the lesions are discovered in a routine examination, the child not complaining of enough throat trouble to attract the atten-

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tion of its parents. Other examples of the early blood infection in children are the associated rheumatism of childhood and osteomyelitis, or the blind abscess formation for which we can find no other entrance of the germ to the blood stream. Many cases of nephritis in children and young adults are found following prolonged absorption from acute or chronic tonsils. It is surprising to see how many of these children show albumen in the urine following even mild types of sore throat. Sometimes the presence of the albumen will persist in the urine after the throat symptoms have subsided and no other cause can be found for the condition, the tonsils are removed followed by a rapid disappearance of the nephritic signs. In the nephritic cases seen in adults of long duration, there is frequently a history of repeated attacks of sore throat occurring year after year. The chronic heart trouble, kidney trouble, and high blood pressure, rheumatic pains and aches are the end results of many years of absorption of the germs and their toxic products.

The point I wish to make clear is that many of the late systemic conditions of middle life and after life are being relieved, or better, can to a large extent be avoided, by removal of infected tonsils early in life. From my own observation it seems to me that the parents who have badly infected throats are likely to transmit the infection to their children by contact when the child is very young, and in these parents whose tonsils have been removed before the birth of their child, the child does not tend to show early infection of the throat unless infected by some individual other than the mother.

In dealing with infected tonsils in children, we must also take into consideration the effect produced on the health and appearance of a growing child by the mechanical obstruction offered to the respiratory organs. Hypertrophy of the adenoid tissue with extensive mechanical obstruction of the nasal pharynx during that period of the child's life when the bones of the face are soft and undergoing development causes definite changes, which persist through life and are extremely detrimental to its health and appearance. Continued mouth breathing causes high arching of the hard palate with shortening of the dental spaces of the upper maxillae, and shortening of the upper lip, exposing the irregular upper teeth. The increased convexity of the hard palate tends to cause a greater deviation of the nasal septum and

even after the tonsils are removed, the obstruction may be sufficient to interfere with the normal physiological activity of the tubes in drainage and equalization of air pressure within the middle ears. Because of this impaired function the tube may become infected and allow the infected material to be carried into the middle ear. Most cases of middle ear infection are caused by germs inhabiting the lymphoid tissue in the child's nose and throat, and in that way producing an auto infection.

The mechanical obstruction of the respiratory tract does not facilitate deep breathing and expansion of the chest; hence this child is more inclined to develop deformities of the chest. The resultant poor aeration of the blood causes the child to appear frail and inactive and mentally dull.

In conclusion the points which I hope to make clear are that tonsil infection is responsible for many of the general systemic conditions of later life; that the infections are acquired in childhood and early youth and persist for years, or perhaps all of its life, unless operated upon. The fact that he does carry this low grade infection all these years, I believe, causes him to suffer a greater or less amount of damage to his vital organs.

"PROCEEDINGS OF THE OKLAHOMA CITY CLINIC ROUND TABLE"— WESLEY HOSPITAL.

ABSCESS, PERINEPHRITIC—METASTATIC. A. L. BLESCH

Case I, Serial No. 8735.

Patient, a woman of 47 with negative family history. The present trouble began three weeks ago with a purulent infection of the right thumb, which after drainage by incision promptly healed. Within a week of the inception of the thumb infection, she was suddenly seized with a sharp pain under the left shoulder blade. This interfered with deep inspiration and was associated with a chill and fever to 103 degrees. The fever has persisted to the present time, two weeks. Within a few days of the chill and inception of the pain, she began coughing up some blood-stained sputum. Respirations were rapid, with retardation and diminution on affected side. There has been a marked soreness over the left lower chest. She has lost strength and weight rapidly.

Physical Examination. A fairly well nourished, quite anemic brunette woman, temperature 100, pulse 96. Lungs are negative to palpation and percussion. No friction rubs. Expansion limited to left. Distinct tenderness with perceptible muscular rigidity over left renal region.

Laboratory. Voided specimen of urine sp. gr. 1016, alkaline. Albumen, large amount, sugar and indican negative. Few pus cells. Blood W. H. B. 8400. R. B. C. 3,160,000 H. B 50%. Renal work out (Dr. Mraz) cystoscope, bladder capacity 300 cc. Bladder picture including ureteral orifices normal. No obstructions to ureteral catheterization. P. S. P. simultaneous 3 m. Fifteen m. quantitative right and left 22%. Left pyelogram normal. No pain on injection of 5½ cc. thorium nitrate.

Diagnosis (Dr. Rucks): Abscess perinephritic left, metastatic

Operation (Dr. Blesh): Location of pus with exploring needle, incision, drainage.

Laboratory examination of smear of pus shows staphylococci in pure culture.

Case II, Serial No. 8736.

A young man of 19 came to the clinic complaining as follows: Three weeks ago, in the midst of good health he suddenly had a mild chill followed by 104 degrees temperature, right lumbar and chest pain and severe frontal headache. After five days in bed he went to work, although he ran a temperature of 100 to 102 continuously and felt badly. There has been constant soreness and pain over right renal region. No urinary disturbance.

Physical Examination. A well nourished muscular young man, clinically negative, except for temperature of 100 and pulse of 120.

Appearance. Physically ill.

Marked tenderness of right renal region along course of ureter to region of appendix. Lumbar muscle rigidity on right side.

Diagnosis—Abscess, Perinephritic, metastatic.

It was only by careful cross-questioning that the primary source of the infection was found in a (at this time) healed furuncle of the face, which had existed during the week before the appearance of the chill and pain over right renal region.

Operation (Dr. Stout): Incision and drainage of several ounces of thick staphylococcus pus, from the region of the upper pole of kidney. Blood count in this case 10,250, urinalysis negative.

Remarks: Within the last year we have had several cases of this kind, the histories of which were precisely similar, one of which we sent home undiagnosed to return later with a large bulging abscess which had diagnosed and almost operated itself. In another, we made the diagnosis, but in operation failed to find the pus. Fortunately it soon found its own way to the drainage tract and emptied itself within a few days.

At first we had the renal tract worked out as a precautionary diagnostic measure, but now we have become so confident in the clinical syndrome and physical findings, that we do not hesitate to make the diagnosis clinically.

The ordinary germs of pus infection give a characteristic metastatic history. Invariably the onset is sudden and occurs with a short prodromal period. There is always pain and soreness about the region of the metastasis and fever.

The metastases from the chronic infections (tuberculosis, cancer, etc.) never declare themselves frankly. Neither patient or physician can exactly fix the time when the patient became sick.

The sources of the primary infection may be hematogenous as in these cases or by direct extension from an infected kidney with or without calculi. In the latter case there is always a more or less long preceding renal history. In the class of cases just described, there is no antecedent urinary story. Direct extension from the kidney almost perceptibly blends the clinical history of a long standing renal trouble with that of a peri-renal inflammatory lesion. Peri-renal abscess by direct extension is usually associated with infected renal stones of pronged pelvic variety which has domiciled and grown and become infected in the kidney pelvis, by extension through the renal collecting apparatus into the filtering zone. Infection occurs directly through the urinary tract or indirectly through the blood stream. In either case, the peri-renal abscess is merely an extension directly communicating with the kidney. In the one case as a rule the kidney is ruined, in the other it is not at all harmed.

CARCINOMA IN RIGHT NOSTRIL, INVOLVING ANTRUM.

(FURTHER REPORT)

J. C. MACDONALD

I wish tonight to make a further report on a case reported in December, 1921. At

that time his right nostril was completely obstructed with a carcinomatous growth. We used repeated applications of radium needles unscreened, direct in the tumor mass, also properly screened over right antrum. This growth had entirely sloughed in six months, the patient gaining in strength and his weight is now 186 pounds, about four pounds above his usual weight. He suffered severe pain over right eye for a time, but this has almost ceased. While the cancer in all probability is not cured, there has been no evidence of recurrence in past six months.

The right eye ball, which had shown bulging for almost eight months, has now receded back to normal. The patient is in a better physical condition other than the diseased area than he has been for several years. While he is still suffering with some pains over the diseased area, the nostril is quite open now and he breathes freely through the affected nostril.

The prognosis in this case is bad, of course, but had he not received the large radium doses with unscreened needles, I believe he would not be in the good condition he is now in.

CASE OF PRIMARY CARCINOMA OF GALL BLADDER—METASTASIS IN POUCH OF DOUGLAS AND IN MES-ENTRIC GLANDS—GALL STONES.

D. D. PAULUS.

Case No.

Male, age 66. Stockman by occupation.

Family history: No. T. B. or malignancy.

Previous history entirely negative. Always been a well man up to present trouble.

Present complaint began six months ago with increased peristaltic pains which were located mainly in center of abdomen about the umbilicus. Patient has constant desire to relieve pain by going to stool, without results, so far as relief is concerned. Cathartics were taken without relief. No blood, pus, or mucous in stool. Family physician states that constipation has steadily increased so that now it is very hard to get bowel action by cathartics.

Pain is more or less constant, with acute exacerbations. No relation to meals. Often keeps patient awake at night. Walks around room at night to relieve pain. Pain often radiates through to back, but not especially to right shoulder. Has exacerbations of pains which do not seem to be in-

itiated by food intake or other conditions, but often produce nausea. No urinary disturbance. Thinks he has lost considerable weight, but knows he is steadily losing in strength. Appetite is steadily declining.

Physical Examination. Fairly well nourished male. No evidence of cachexia. Temperature 98. Pulse 100. Blood pressure 174 100. Pupillary reaction negative. Teeth worn. Throat negative. Glandular system negative. Chest—the art tones muffled. No murmurs. Occasional extra systole. Increased tension of pulse. Liver and spleen not palpable. Marked voluntary resistance of abdomen, especially right side. Tenderness of same side. No tympanities. Otherwise examination negative.

Laboratory. Urine negative. W. B. C. 7,800. Reds 3,800,000. Hb. 95%. Feces—no parasites ova, no blood or pus. X-Ray, stomach negative. Duodenal cap normal. Tenderness outside of stomach over G. B. region. Marked colonic stasis. Seventy-two hours with spastic sigmoid-rectal flexure.

Operation. Right rectus incision—appendectomy, cholecystectomy.

Operative Findings. Appendix retrocecal—white cord-like obliterated lumen. Gall bladder contained two large stones, dome smooth—base thick, hard, indurated. Mesenteric glands enlarged, especially lower part of abdomen. Cecum anchored rather high. Hard mass in pouch of Douglas attached to peritoneum—size of base ball.

Pathologic Findings. Gall bladder wall at base thick, mucosa irregular. Two large stones. Base very hard, indurated section shows adeno-carcinoma, mesenteric gland adeno-carcinoma, section of mass adeno-carcinoma.

The interesting condition in this case is the small lesion of the primary cancer of the gall bladder as compared with the extensive secondary metastatic involvement. What must happen in these cases is that the carcinoma cells form the primary lesion, in this case the gall bladder itself, fell down into the pelvis and became engrafted on the peritoneum, producing this cauliflower-like growth in the pouch of Douglas as with secondary mesenteric gland involvement. A similar condition in rare instances is found in carcinoma of the stomach where the carcinoma cells drop down into the pelvis pouch of Douglas—and produce a secondary lesion. The route

of metastases of cancer in these cases forms a strange contrast to the ordinary lymphatic metastases and the far less frequent metastases by the blood stream.

Whenever on opening an abdomen the operator finds an inexplicable metastatic carcinomatous mass in the lower part of the pelvis—pouch of Douglas, he should always look to the upper part of the abdomen for the primary lesion. A well experienced surgeon and one familiar with the literature on this subject, will never fail to do this.

REPORT OF A CASE OF REFERRED PAIN.

DR. WM. H. BAILEY

Miss D. D. Case No. —. Came to the laboratory to find cause of a persistent and severe aching of the teeth and jaw of the lower left side which had lasted over two months.

Previous History. Patient a slender but well nourished young adult. Has had only a few of the diseases of childhood. Always well and strong as a child. Has never had any severe illness as typhoid, scarlet fever, or pneumonia. Always feels well, but never very fleshy or robust. Not troubled with especially frequent attacks of tonsillitis, although she has had a few. Four or five years ago she had an attack of neuritis of the jaw, somewhat like this attack, but she doesn't remember whether it followed an acute cold, or if it affected the same side as this attack.

Family History. Nothing of importance as related to this case.

Present Illness. About two months ago the patient caught cold while swimming at one of the outing resort lakes. Within a day or two she began to have neuralgic pains in her left lower jaw. At times the pain radiates to the upper jaw of the same side and to the left ear. Occasionally there is a sense of soreness to the skin over the whole left side of the face which always stops abruptly at the meridian line. Pain never extends over to the right side either of the jaw or face. At the present time it is painful to the patient to bite on the lower teeth of the left side. Pain is more noticeable at night, but is never of a throbbing nature. No increase in pain caused by either hot or cold foods. Aspirin will almost entirely relieve the pain for a few hours but it invariably returns.

Physical Examination. On account of the definite localization of the trouble only

a partial physical examination was made. Teeth were found in good condition with a few well filled cavities. None were tender on pressure, but the second lower bicuspid and the first lower molar on the left side were extremely sensitive on tapping. Gums and mucous membrane of the mouth of normal appearance. Tonsils were slightly enlarged, but not especially abnormal in appearance. The sublingual and sub-maxillary glands on the left side were just palpable. Examination of ears did not show any discharge nor abnormal condition of the drum. Nasal examination was negative for spurs, deflected septum, foreign bodies, or new growth. No evidence of infection of any of the sinuses could be discovered. X-Ray films of the most sensitive teeth in the lower jaw did not reveal any abnormal condition in them.

Patient was referred to a dentist for a complete and thorough dental examination which revealed an unruptured and impacted upper left third molar. This was removed and all the pain and tenderness in the lower jaw ceased as if by magic and has not returned.

The subject of referred pain is most interesting and often the primary lesion causing such pain is most difficult of discovery. Like will-of-the-wisp referred pain from a certain lesion may appear here and there with often very few signs that will point to the real cause of the trouble. Time must be taken to work out these cases carefully so as not to remove possible causes and allow the primary lesion to remain uncorrected and be embarrassed later to have to admit ourselves that the first line of treatment was not only incorrect but that normal structures had been mutilated and possibly destroyed.

ST. ANTHONY'S HOSPITAL CLINICAL SOCIETY, OKLAHOMA CITY.

REPORT FOR OCTOBER, 1922.

UN-UNITED FRACTURES.

DR. CURT VON WEDEL.

The subject of un-united fractures is one thing that is interesting the profession greatly today, especially with the ever-increasing numbers due to the severe industrial injuries. We must very definitely define Mal-union, Delayed-union, and Non-union. Something occurs to prevent a normal osteogenesis. Just what this something is, is not thoroughly understood.

The treatment, however, is autogenous bone graft.

In general, there are three major methods of bone grafting: 1. Osteo-periosteal. 2. Intra-medullary. 3. Whole thickness of large graft, consisting of periosteum cortex, endiosteum, and medulla.

The American school today is largely using the third or whole-thickness graft. First, because with it we have layer to layer apposition. Second, we can obtain firm fixation in any desired angle, thereby enabling us to secure normal alignment. Third, every member of the osteogenetic cell area is used. There have been many arguments as to the value of periosteum in bone regeneration, likewise, there are many arguments as to the viability of the graft. I believe, however, that it has been shown beyond a question of doubt by Haas, and Barney Brooks of St. Louis, that a large sized graft carefully cut and not infected, not only lives, but has regenerative power within itself.

The French School has shown some brilliant results in the osteo-periosteal method, however, as most of their work has been done with delayed union, or with loss of bony substance, and not with true mal-union, a comparison is unfair. Needless to say, that if an osteo-periosteal graft will live, surely a whole thickness graft will live.

There are three cardinal principals in bone grafting: 1. A large strong graft. 2. Firm fixation of the graft. 3. Firm external fixation.

I am this evening presenting four cases: 1. Non-union in the anatomical neck of femur of nineteen months duration. 2. An un-united patella with one inch separation of fragments, of five months duration. 3. A pure case of non-union of the tibia of eighteen months duration and 4, a case of delayed union and mal-union of the tibia of three months duration.

CASE 1. A large vigorous man of thirty years of age sustained a fracture of the anatomical neck of the right femur about nineteen months ago. This was treated by simple traction in bed. No attempt was made to fix this in abduction. Had this case been properly put up in a Whitman's abduction cast no trouble would have resulted.

A tibial dowel peg was inserted through the trochanter into the head, according to the method of Albee. Recovery was uneventful. Today, about one year later, this man shows evidence of a good deal of his

graft being absorbed, but with considerable union present. I believe the next case I have of this type I will use a whole thickness of the shaft of the fibula.

CASE II. A normal, healthy man of about forty years of age having sustained a fracture of the right patella some six months ago, was treated with adhesive plaster. At present fragments are one and one-half inches apart. Longitudinal incision was made. The cartilaginous end of the patella chiseled off. The joint cleaned out. The severed ends of the lateral ligaments were firmly sutured, and a deep kangaroo tendon mattress suture was placed at the lateral ends of the patella. A double triangular area was cut from the patella and a graft was made from the tibia containing all the layers of bone. This was made to fit exactly and was driven in with force. The anterior ligaments were then sewed up, holding the graft firmly in place.

Today, twelve weeks from date of operation, the man has solid union in his patella and sixty-five per cent normal range of motion. With massage it is gradually returning to normal.

CASE III. A young man who sustained a fracture of both bones of the leg eighteen months ago. Operated on several times unsuccessfully with the attempt to secure union. He came to us with no union whatsoever. The medullary cavity was completely obliterated with massive interposition of fibrous tissue. Under ether anaesthetic the end of the bones were thoroughly freed of fibrous tissue and a large graft was cut containing all layers of bone. This was firmly fixed in position and the leg put up in plaster. Today, two months from date of operation, he has apparently good union. However, we are not allowing this man to walk for some two months more as we wish to make certain of solid union.

CASE IV. A young man who some four months previous to his coming to us, sustained a fracture of both bones of the right leg. Apposition was bad. Union was soft, allowing a good deal of lateral motion. Under spinal anaesthetics the old fracture was broken up. Bones were put in good alignment and a large sliding graft secured firmly in place.

Today, two months later, the boy has solid union and is getting around on his foot, with crutches.

MEGA COLON OR HIRSCHPRUNG'S DISEASE.

DR. A. A. WILL.

Reported cases and scattered reports of cases are found in literature since 1825, but it remained for Hirschprung in 1886 to report and describe several cases and give the symptoms. The etiology of mega-colon, Hirschprung described as a congenital idiopathic dilatation of the colon.

Several theories have been advanced since that date as to the etiology. Among these theories may be mentioned nervous origin, colitis and malformation due to defects of the cord. The consensus of opinion now, is that the true mega colon is a congenital defect beginning probably in the early embryology of the fetus. The majorities of the true mega colon involve the entire colon and at least a portion of the rectum. The colon being greatly distended and following the distention a marked thickening appears throughout the wall of the colon and the mega colon.

Diagnosis: Abdomen is usually distended. No pain or tenderness over the region of the colon. No peristalsis can be made out. The child does not gain in weight and is apparently suffering from absorption of toxemia. Emaciation continues in spite of large amounts of food that are given. With the colon tube or proctoscope passed into the pelvic colon, you will be able to drain off large amounts of liquid feces. With these cardinal symptoms and the use of the X-Ray the diagnosis is usually easy.

Treatment Advised: Regulation of the diet, colon irrigations and the use of atropine and strychnine in physiological doses. Surgical treatment, *i. e.*, resection of the colon after diagnosis is once established. Prognosis: Few recoveries.

CASE REPORT.

Stanley D., age one year, comes to us with a history of obstipation since birth. Weight about ten pounds. Skin dry, face drawn and peaked. Abdomen distended from ensiform to pubes. No peristalsis visible anywhere in the abdomen. Palpation shows doughy mass found over entire colon; otherwise the abdomen appeared negative. Rectal examination, digital,—Sphincter, normal, rectal pouch enlarged. Walls not in contact. With the use of the proctoscope passed into the pelvic colon a large amount of liquid feces were withdrawn on several occasions. Temperature and pulse normal. Diagnosis of stricture

of the colon with colitis had been made on several occasions.

Dr. W. M. Taylor, who first saw the child, had made a diagnosis of possible stricture of the colon and was inclined to believe that it was a true mega colon or Hirschprung's Disease. With the use of the proctoscope and X-Ray the diagnosis was easily confirmed.

Plan of Treatment: First a colostomy as near to the cecum as possible, which was done on July 18, of this year. Child returned to his home and was advised to return some time in the future. Child gained one and one-half pounds per week from time of discharge until he returned to hospital October 10, 1922.

On above date, at second operation, it was planned to do a resection of the colon. The child was given ether anaesthesia and the abdomen opened. Child showed a marked degree of shock and it was decided to do a simple anastomosis. Anastomosis between the ileum and pelvic colon, leaving the previous colostomy wound open. Child returned to bed in good condition. Post-operative condition good. On the morning of the third day post-operative, the child collapsed and died at 11 A. M.

Cause of Death: Surgical shock. Acidosis.

No post-mortem obtained.

CAROTINOID PIGMENTATION OF SKIN RESULTING FROM VEGETARIAN DIET.

Hirotohashi Hashimoto, Sapporo, Japan (Journal A. M. A., April 15, 1922), has observed more than thirty-five patients showing a yellow discoloration of the skin after eating unusual amounts of yellow squash. This pigmentation is the same as that caused by the liberal use of carrots in the diet. The color varied from a canary yellow to a deep orange gold. The palms of the hands, the soles of the feet, the forearms, and the nasolabial folds were tinted more heavily yellow than other parts of the body, whereas the sclerae were not affected. There is no itching of the skin, general malaise, fever, etc. When squash is removed from the daily diet, the yellow pigmentation of the skin disappears slowly. It is of interest here to note that the palate resumes its normal color most slowly, the yellow discoloration being observed here even several weeks after the disappearance of the pigmentation of the palms of the hands or the soles of the feet. Squashes (*Cucurbita maxima*), as usually eaten by the people in Hokkaido, contain a large quantity of carotinoids. These are probably absorbed easily from the small intestine. Hashimoto was able to demonstrate in vitro that these pigments dissolve readily in human duodenal fluid kept at the temperature of 37 C., though not in the least in gastric juice. The pigments thus absorbed from the intestine circulate in the blood. In some cases of nikan or squash pigmentation the presence of carotin in the blood drawn by venipuncture was determined.

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive the Journal should call for immediate notification of the editor, 508 Barnes Building, Muskogee, Okla.

Local news of possible interest to the medical profession, notes on removals, changes in address, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application. It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

EDITORIAL

MORE FOOD FOR THE GULLIBLE.— ABRAMS "ELECTRONICS."

The latest Mahomet to upset the medico-scientific world is with us, and, like his predecessors regardless of the date of appearance upon the stage of time, his methods proclaim the man and almost surely the inevitable end of another fiasco. The "Electronic" Theory or to be brief the "Electronics" of Dr. Albert Abrams, San Francisco, have all the ear marks of many things that have passed with time, as weighed and found wanting. Like others of the type too, they are strangely attractive to the credulous and unscientific, while an audience composed of finely equipped medical mentality in the skeptical City of Boston couldn't see the point in a specially staged demonstration at all, according to

the Journal, A. M. A. The article dealing with that phase, however, noted that the "clauquers" in the rear of the hall, supporters of the new revolution, were loudly enthusiastic of the demonstration. They were more receptive than their skeptical fellow observers seated on the front benches.

The system seems to depend for its marvelous power upon the reaction obtained from an electrical hodge-podge, the vital part of which is secret and which part the lessee (the apparatus is not for sale) is prohibited by his signed contract from unsealing, entering or investigating in any manner. Just why it is too sacred for the prying eyes of a curious profession is not known, though strongly suspected by many incredulous observers. In Oklahoma it has found some champions of variegated type, Eclectics, ex-Ministers, Osteopaths and others have acquired the "power" by purchase to make diagnoses in a hitherto unheard of manner. It is said the author of all the excitement maintains against all comers that syphilis is practically universal, and that it may be demonstrated by use of the apparatus in question. When a Wassermann is ineffective———

The Boston Medical and Surgical Journal (October 19) has this to say explanatory of the matter:

"Opportunity had been given a representative of the practitioners of the Electronic method to inspect the room and to arrange for proper wiring, but when the meeting was called to order, Dr. Abrams said it was impossible to give a demonstration then. Instead, he and his followers started to hold an "experience meeting," in which they might testify to the efficiency of the method. Dr. Prior, chairman of the Board, acting with dignity and firmness, refused to listen to such a recital. The meeting was adjourned. The next day—Tuesday, October 10—pursuant to an invitation extended by him, Dr. Abrams gave a clinical demonstration of his method in the laboratory of one of his disciples. He first attempted to demonstrate simple phenomena based upon his theory of Electronic Reactions. It was a remarkable coincidence that the reactions were clearly visible or audible to those followers of his who were in the rear of the room, but were quite imperceptible to those members of the Massachusetts Medical Society who were there to look into the method and who occupied chairs close to the demonstration. Dr. Abrams consistently refused to submit his method to any test offered by those

present, and confined himself to demonstrating the presence of lesions, the existence of most of which could be proved only by post-mortem examination. He selected for his experiment a member of the Journal staff, a man in apparently perfect health. Yet this individual, according to Abrams, presented the following pathological conditions: Streptococcus infection of the left frontal sinus and of the right antrum; two ohms of tuberculosis, location, intestinal tract; congenital syphilis; sarcoma, non-metastatic, of the intestine. In demonstrating the situation of the sarcoma, Abrams located it first in the right lower quadrant and later, by another method, in the left lower quadrant.

"Analysis of the results of Dr. Abrams' statements and demonstrations while in Boston shows two outstanding facts. First, he persistently refused to submit his method to a scientifically controlled test, or to a demonstration given under such conditions that the investigation of the method could be carried on under the usual rules of scientific criticism. Second, in the one case upon which he did demonstrate his method, he found the existence of four diseases—syphilis, tuberculosis, carcinoma, and streptococcus infection—in an individual entirely free from symptoms of any disease whatsoever. If, by his method, he could diagnose disease where no symptoms existed, he surely should have been able to approach without fear of failure a test based upon the diagnosis of blood specimens from a patient with well-marked clinical pathology. The fact that he refused to perform such a test is capable of only one interpretation—that is, that he knew full well his inability to make a really correct diagnosis."

Paternity of the child when questioned may also be promptly settled or rather fastened upon the proud parent. There seems to be no end to the possibilities of the affair, if, the claims of the promoters are to be accepted. One alluring feature of the wonder is said to be its financial aspect. One to two thousand dollars a week is the income ordinarily to be expected from its use—that is—assuming there is that much money in the community and it is in pliable, yielding, credulous hands.

Editorial Notes—Personal and General

→ **Dr. Thos. W. Dowdy**, Ardmore, ^{Mo.} recently moved to ^{Nev. Ar.} Wilson.

→ **Dr. G. A. Kilpatrick**, Wilburton, has moved to Henryetta.

→ **Dr. B. Cheston Goldberg**, Frederick, has moved to Oklahoma City.

Dr. and Mrs. W. L. Kendall, Enid, visited Chicago in November.

Dr. I. V. Hardy, Medford, visited the Rochester Clinics in September.

Drs. S. N. Mayberry and J. R. Swank, Enid, visited the Rochester Clinics in October.

Dr. and Mrs. E. E. Rice, Shawnee, attended the New Orleans meeting, American Legion, in October.

Dr. C. P. Mitchell, Lindsay, is in Chicago where he is doing special work in eye, ear, nose and throat.

→ **Dr. J. C. Baker**, Oklahoma City, has moved his office to Kosse, Texas, where he will continue to practice.

Dr. F. M. Sanger, Oklahoma City, is doing special work in urology at Washington University, St. Louis.

Dr. W. P. Lipscomb, Oklahoma City, has quit practice and removed to Denver, Colorado, where he will reside in the future.

Dr. Claude Thompson, Muskogee, attended the annual meeting of state secretaries and editors, Chicago, November 17th and 18th.

Sapulpa has gone to the courts in an effort to collect damages for and prevent future pollution of its watershed by drainage from oil wells.

Dr. C. V. Rice, Muskogee, addressed the Oklahoma State Nurses Convention at Muskogee in October. His subject was on infant feeding.

Dr. and Mrs. C. P. Hues, Lawton, attended the Detroit meeting, Grand Lodge, I. O. O. F., of which order Dr. Hues is past grand representative.

McIntosh County Medical Society met in Eufaula, Tuesday, October 17th. Subject, "Typhoid Fever." General discussion opened by Dr. J. C. Watkins.

Dr. A. G. Cowles, Ardmore, attended the Boston Meeting, American Congress of Surgeons, after which he visited clinics in New York and Cleveland.

Dr. T. B. Hinson, Enid, "went to the mat" with Garfield County Commissioners when they refused to pay for county charges he had given professional and hospital care. He will try the efficacy of the courts in the matter.

Dr. Walter Hardy, Ardmore, has ordered and will have installed in the Hardy Sanitarium a new broadcasting instrument which will allow him to give and receive radio messages. He expects to have the same installed so that election returns can be handled.

Dr. A. H. Stewart, Lawton, addressed the American Legion Post of that city recently, calling attention to the prevalence and prevention of industrial accidents.

Dr. and Mrs. P. F. Herod, El Reno, have returned from an extended trip to Cuba and the New Orleans American Legion meeting. Dr. Herod was a delegate to the latter.

The Sulphur Veterans Bureau Tuberculosis Hospital has been directed to prepare for the reception of all Oklahoma ex-service men now in hospitals in other states. It is optional with the men as to their removal.

Dr. Fred S. Watson, Okmulgee, was married Wednesday, October 4th, to Miss Gelene Nichols of Ozark, Arkansas. The Rev. John T. Donnell, of Ozark, Ark., officiated. Dr. and Mrs. Watson left immediately for the Grand Canyon and other points in the west. They will be at home in the Beaulaire apartments in Okmulgee after October 20th.

Woodward County Medical Society met at Woodward October 27th, as guests of the Woodward Clinic. Clinics were held during the morning, a luncheon tendered thirty-five guests at noon, after which an address of welcome was given by Hon. J. L. Pope, of the Chamber of Commerce. A number of out-of-town physicians and their wives were present.

Tulsa County Medical Society met in the Municipal Auditorium, Tulsa, October 9, 1922, at 8 P. M. Dr. Atchley reported the meeting of the Superintendent of Schools, the City Superintendent of Health, the School Nurses and the committee for the consideration of matters of mutual interest. Dr. Murdock reported two very instructive cases. Other interesting cases were presented by Drs. Ralph Smith, D. O. Smith and Pigford. Attendance 32.

TULSA HAPPENINGS.

Were you ever in Marlin, Texas, a health resort? A few years ago when one went down the main drag of that town you could hear nothing for the popping of the static machines. It looks like the same thing will soon be on here in Tulsa; the Abram's "Iconoclasts" are appearing in increasing numbers; two are in the hands of Osteopaths and one is being advertised by members of the Tulsa County Medical Society.

The opening of the Atlas Life Insurance Co. building has made many changes in physicians offices possible as the second floor of that building has been allotted to Doctors and Dentists. Among those who have moved into it are E. B. Wilson, Billington, Johnson, Henry Browne, Hickey, Harry Greene. Drs. Furrows, Benson and Buxton all dentists, also moved to the Atlas Life. The moving of the Atlas Life Insurance from the Palace Building gave rooms to Drs. Butler, Peden and Atchley.

The regular meeting of the Tulsa County Medical Society on Nov. 13th was well attended. Dr. Cook's paper on the Care of the Eyes of the New-Born, was the most freely discussed of any paper in some time.

A number of physicians have recently located in Tulsa and are affiliating themselves with the Society. It looks as though there will soon be as large a membership as we once had; before several dropped out because they did not belong.

Dr. J. Winter Brown, who was operated on by

Dr. Harvey Cushing in June, continues to improve and is able to get out to attend meetings of the Society but is not able to resume practice.

DOCTOR ISHAM CORNELIUS TALLEY.

Dr. I. C. Talley, Red Oak, died suddenly September 27th while in attendance upon an obstetrical case. Death is said to have been due to heart failure, from which he had suffered for some time.

Dr. Talley was born at Pineville, Ark., August 4, 1862, attended the common schools and University of Arkansas, graduating in medicine at the University of Louisville in 1892. He has practiced for 24 years at Red Oak and was universally respected by those who knew him. Besides his wife he is survived by three sons and three daughters, all of whom reside in Latimer County. Funeral services were held at the Wilburton Methodist Church and interment was made at the City Cemetery.

NEW BOOKS

THE TREATMENT OF FRACTURES The New (9th) Edition, Revised.

The Treatment of Fractures: With Notes Upon a Few Common Dislocations. By Charles L. Scudder, M. D., Assistant Professor of Surgery at the Harvard Medical School. Ninth Edition, Revised. Octavo volume of 749 pages, with 1252 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Buckram, \$8.50.

PIRQUET'S SYSTEM OF NUTRITION

An Outline of the Pirquet System of Nutrition. By Dr. Clemens Pirquet, Professor of Pediatrics at the University of Vienna, Austria. 16 mo of 96 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, \$2.00 net.

BRONCHOSCOPY AND ESOPHAGOSCOPY

Bronchoscopy and Esophagoscopy. By Chevalier Jackson, M. D., Professor of Laryngology, Jefferson Medical College, Professor of Bronchoscopy and Esophagoscopy. Graduate School of Medicine, University of Pennsylvania. Octavo of 346 pages with 114 illustrations and 4 color plates. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, \$5.50 net.

THE THYROID GLAND

Clinics of George W. Crile, M. D., and Associates at the Cleveland Clinic, Ohio. The Thyroid Gland. Octavo of 228 pages, with 106 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, \$5.00 net.

THE MEDICAL CLINICS OF NORTH AMERICA

(The St. Louis Number)

The Medical Clinics of North America (issued Serially, one number every other month). Vol. VI, Number 1, July, 1922. By St. Louis Internists. Octavo of 203 pages and 61 illustrations. Per clinic year (July, 1922, to May, 1923). Paper, \$12.00; Cloth, \$16.00, net. Philadelphia and London: W. B. Saunders Company.

AN ESSAY ON PHYSIOLOGY OF MIND

An Essay on the Physiology of Mind. By Francis X. Dercum, M. D., Ph. D., Professor of Nervous and Mental Diseases in the Jefferson Medical College, Philadelphia, 12 mo of 150 pages. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, \$1.75 net.

CLINICAL MEDICINE

Clinical Medicine, Tuesday Clinics at the Johns Hopkins Hospital. By Lewellys F. Barker, M. D., L. L. D., Professor of Medicine, Emeritus, Johns Hopkins University; Visiting Physician to Johns Hopkins Hospital, Baltimore, Md. Octavo of 617 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, \$7.00 net.

OPHTHALMOSCOPY, RETINOSCOPY AND REFRACTION

By W. A. Fisher, M. D., F. A. C. S., Chicago, Ill., 31 North State Street, publisher. Professor Ophthalmology, Chicago Eye, Ear, Nose and Throat College; late Professor Clinical Ophthalmology, University of Illinois; Surgeon Charitable Eye and Ear Infirmary; ex-President Chicago Ophthalmological Society, etc. Cloth, 248 illustrations, 48 colored plates. Price, \$4.00.

This little volume gives a complete and very comprehensive outline for examination of the eye in all its phases, making each step very clear, therefore it is a valuable addition to the library of either students or practitioners.

PRACTICAL INFANT FEEDING

Practical Infant Feeding. By Lewis Webb Hill, M. D., Junior Assistant Physician to the Childrens' Hospital, Boston; Assistant in Pediatrics, Harvard Medical School. Octavo of 483 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1922. Cloth \$5.00 net.

IMPORTANT ANNOUNCEMENT.

The medical profession everywhere will be interested in the announcement that the Abbott Laboratories of Chicago have purchased the Dermatological Research Laboratories of Philadelphia. This is an advance step for the Abbott Laboratories and will give them deserved recognition among the leading manufacturers of medicinal products.

It will be remembered that the Dermatological Research Laboratories were the first in the United States to produce Arsphenamine during the war when there was such a scarcity of this article; and these Laboratories became well known to the medical profession for their patriotic attitude in developing and manufacturing medicinal preparations in this country. By this purchase of the "DRI" products, the Abbott Laboratories inherited their prestige.

The Abbott Laboratories acquired control of the Dermatological Research Laboratories on November 1st; and are continuing to operate them in Philadelphia under the direction of Dr. Geo. W. Raiziss, head of the department of Chemistry, and his corps of specially trained assistants. Orders for "DRI" products will be promptly filled from the Philadelphia Laboratories or from the home office of the Abbott Laboratories, Chicago, or by any of their branches or distributors. For further particulars regarding their purchase of the Dermatological Research Laboratories, the

readers of this Journal are referred to the statement of the Abbott Laboratories on another page of this issue, entitled, "Important Announcement to the Medical Profession."

ERYTHEMA BULLOSUM.

Erythema bullosum is a rare type of erythema multiforme in which the exudation is so rapid and extreme as to cause bullae in addition to the edema which occurs in some of the more common forms. J. S. Eisenstaedt, Chicago (Journal A. M. A., May 6, 1922), has studied five patients suffering from a severe form of erythema bullosum, three of whom were desperately ill. These cases seem to indicate that erythema bullosum is a disease due to toxic substances. The toxic substances may be from widely different sources. In attempting to find an etiologic factor in different cases, it is well to rule out focal infections from the teeth, tonsils, etc. Any focal infection present should receive expert attention after the subsidence of the attack. Treatment directed to alkalizing the patient to the utmost and giving large doses of salicylates is of great value. Proctolysis for the exhibition of alkali salts and salicylates is indicated when the patient cannot take fluids by mouth. Regardless of how desperate the condition may appear, recovery usually takes place under appropriate treatment.

THE NEW HOME OF HYNSON, WESTCOTT & DUNNING OF BALTIMORE.

This national drug firm has just erected and occupied its own building at Charles and Chase Streets, Baltimore. The building is artistic in appearance and adapted to accommodate the several departments of their rapidly developing business which began in a small way in 1889, but has grown to a million a year, with an organiza-



tion of 125 people. Their unique sales department alone comprises 19 men who visit physicians in all parts of the United States but do not sell goods. Thirty-five of their products have been accepted by the Council, and are advertised in this Journal. None of their preparations are offered direct to the public but are introduced to the medical profession for the use of physicians and their patients. Mr. H. P. Hynson, one of the founders, died in 1921; but their growing business has now been established in new quarters under the immediate supervision of Messrs. James W. Westcott and H. A. B. Dunning (the latter being the active administrator) with a highly trained force, equipped to meet promptly the demands of the medical profession anywhere and at all times.

STANDING COMMITTEES.*

Medical Defense—Drs. L. S. Willour, Chairman, McAlester; J. H. White, P. P. Nesbitt, C. A. Thompson, Muskogee; McLain Rogers, Clinton.

Legislative—Drs. A. K. West, Majestic Bldg., Oklahoma City; J. M. Byrum, Shawnee; G. A. Boyle, Enid; C. A. Thompson, Muskogee.

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TUBERCULOUS INFECTION IN CHILDREN

RAY M. BALLYEAT, A. M., M. D.
Oklahoma City, Okla.

During the past much has been written concerning pulmonary tuberculosis, but little has been said about pulmonary tuberculous infection in children. Most that has been written on this subject has dealt with pulmonary tuberculosis in adults, as pulmonary tuberculosis in children is comparatively rare. Tuberculous infection in children is quite common, but little has been written about it. It is especially this phase of the tuberculous problem I wish to discuss. Today the phthisiologists are few who do not believe that clinical tuberculosis in adult life, in civilized countries is, with rare exceptions, a recrudescence of the infection acquired in childhood. Clinical pathology and neocroscopy findings have proved that a tuberculosis infection or active tuberculosis is present in from 85 to 95 per cent of all children under 16 years of age. It is believed by many that any child who has been closely associated with a person having open tuberculosis is potentially tuberculous, the disease manifesting itself later in childhood or in adult life.

Since it is generally believed that, with rare exceptions, clinical tuberculosis of adult life is only an awakening of a tuberculous infection contracted in childhood, then how important it must be to know something about the extent of the childhood infection so that one's environment may be changed, if need be, to protect the child from the consequence of the infection. The individual should be treated as soon as the presence of the infection in childhood can be determined, and all possible means should be used to increase resistance at an early age by improving home conditions and personal and school hygiene. The treatment is chiefly teaching such children how to live. It is important that these children be impressed with the fact

that they have a tuberculous infection, and taught, not only about right living, but also concerning the signs and symptoms of an early active tuberculosis so they will present themselves for examination and management while the infection is in the incipient stage.

It is interesting to note how, under proper guidance, the activity of many cases of moderately advanced pulmonary tuberculosis will become arrested, but it frequently takes months or years to obtain such results. It is also interesting to observe how much shorter period it usually requires, and how much **surer** one feels that the arrested condition may become permanent if the patient is placed under management early in the disease. One who examines many chests frequently sees a patient with advanced pulmonary tuberculosis whose history and chest findings indicate that the present activity has extended over a period of years, yet the patient is just awakening to the cause of his trouble. In all probability, if such patients had been examined in childhood, evidence of a massive tuberculous infection would have been found. It is also reasonable to believe that if they had been told then of the degree of their infection and the possibilities of the inactive process becoming active, and had been instructed in the signs and symptoms of early activity, they would have presented themselves at such a time that the disease would have been amenable to treatment.

In determining the possibilities of a child's having active tuberculosis later in life, many factors must be considered. The influence of the constitutional factor has been pointed out by Pearl. In taking the histories of several children in the same family who have lived under practically the same environment, it is interesting to note that they often vary widely in the resistance they offer toward diseases in general. Again, the resistance offered by children of one family to diseases, compared with the resistance offered by the children of

another family who are living under practically the same environment is quite different. With such observations it seems reasonable to believe that the inherited constitution of the individual plays a part in determining whether or not a child who is infected with the tubercle bacillus will develop active tuberculosis in childhood or adult life. The influence of environment in the cause of clinical tuberculosis has been pointed out by many writers and recently discussed in detail by Krause. In the first place, environment determines whether or not a child will receive a tuberculous infection, and if so, whether it will be a light, medium or massive one. It has much to do with increasing or decreasing the resistance of the individual. So, after all, environment is the chief factor in determining the degree of the initial or subsequent infection, and the quiescence or activity of the infection. The degree or extent of the infection in early life is a factor which should be given careful consideration and it is to this one that I wish especially to call attention.

By certain physical signs and X-ray findings, the degree of the infection may be determined. A positive D'Espine sign is an indicator of tracheo-bronchial adenopathy. The appearance of the hilum as shown by the X-ray will differentiate tuberculous from non-tuberculous glands. The enlarged hilum due to non-tuberculous infections is usually only moderately enlarged and not very dense. It is smooth in appearance, while the tuberculous hilum is usually larger and of greater density, with irregular borders and granular in appearance owing to its infiltration with calcified tubercles. The hilum shadow due to a non-tuberculous infection can be compared in appearance and significance with the hyaline cast found in urine, while the tuberculous hilum can be compared with the granular cast.

After careful examination and observation of over 600 children at the Oklahoma City Tuberculosis Dispensary, I have come to the conclusion that the degree of infection obtained in early life is a very large factor in determining whether or not a child will develop active pulmonary tuberculosis some time in life. From carefully taken histories one will obtain a story of childhood contact in 65 to 80 per cent of all moderately advanced cases of pulmonary tuberculosis. Many contact patients give no history of childhood exposure, due to

lack of knowledge of the tuberculous problem when they were children. If the histories of such exposures could always be obtained, the percentage of childhood contact would be quite materially increased.

Fishberg and others have collected a large series of cases showing that conjugal tuberculosis is rare. We have on our records over one hundred cases of moderately advanced pulmonary tuberculosis whose mates we have had the opportunity to examine. We have not found a single case of tuberculosis in the mate unless he had had childhood exposure.

Pulmonary tuberculosis is not inherited, but the majority of cases are contracted from father or mother. This accounts for the belief by both physicians and laity in the past that tuberculosis is inherited. Children may receive very heavy infections, yet probably due to their resistance, the infection is well cared for until after they reach adult life.

As chest men usually see these cases after they are active—in other words, after they are adults, we can only tell them how they should have been protected when they were children, and how to protect the coming generation, but that does not decrease their infection. You obstetricians observe the prospective mother when she has active tuberculosis, and you have the opportunity to tell her about the danger of infecting her child. You pediatricians see the children living in homes where there are open cases of tuberculosis. From time to time during their childhood and adolescence you will examine them and will have a chance to determine the degree of their tuberculous infection. You should teach them about the signs and symptoms of early activity. If this were done, the number of cases of advanced pulmonary tuberculosis would, in all probability, be appreciably reduced. I have known a number of doctors who did not believe that a patient with advanced pulmonary tuberculosis should be told the cause of his symptoms, but that he should die in peace. That might be justifiable if it were a non-infectious disease such as cancer or nephritis. Whenever a patient with open tuberculosis, without knowledge of his trouble, lives in a home where there are children, one may expect to find a heavy tuberculous infection on examining the children.

The following case illustrates how important it is that every patient with open tuberculosis should be instructed about the

danger of infecting children. Not many months ago I saw a grandmother with moderately advanced pulmonary tuberculosis. She had been seen by a physician who recognized the disease as such, but felt that she would enjoy life more if she did not know that she had tuberculosis. The management that he placed her under was very good except for the failure to instruct her about protecting others. Her daughter is a semi-invalid—probably tuberculous. This left the grandmother to care for a six months old child. When the grandmother was questioned about the child's diet, I found that she was so careful about the temperature of the milk that she always tested the bottle before giving it to the child. This afforded means of transmitting to the child probably thousands of tubercle bacilli every two to four hours. If this grandparent had been told about her disease, she would no doubt have used every precaution to protect the child.

By treating a case of tuberculosis we have a chance to save one life, but by teaching that same patient how to care for his sputum in order to protect children, we may save the lives of several. I believe that the decrease of morbidity and mortality due to tuberculosis will not depend so much on better means of treatment, but upon teaching the people the danger of childhood exposure, and upon instructing contact cases about the signs and symptoms of early tuberculous activity.

Discussion: Dr. W. M. Taylor, Oklahoma City, Okla.

I shall confine my remarks to only one phase of prophylaxis in the newborn. We all are convinced of the dire effect upon the tuberculous mother, though the process be not active. Many mothers whose condition is fair can partially nurse their infants during first two or three weeks with no ill effects to themselves or the baby, till by substitute feedings, the baby is put on a suitable modified milk formula.

These infants are often malnourished at birth and by the addition of even small amounts of breast milk their chances for survival are much increased.

I think this much consideration is due the baby in every case, except when the mother is suffering from an active open infection.

Discussion: Dr. C. M. Pounders, Oklahoma City, Okla.

I think the most impressive thing about this subject is the great frequency of tuber-

culous infections in children. I do not think this has been properly appreciated in the past. It can really be classed as a children's disease. If we would be a little more alert and watch a little more closely for tuberculous infections in children the number of cases of adult tuberculosis could be materially reduced.

One thing that Dr. Balyeat did not mention and which I think is quite important in children is the tuberculin reaction. In babies under one year of age I think a positive tuberculin reaction is practically diagnostic. Of course as you go beyond this age its value lessens, but even up to ten years of age I think it is of value taken in conjunction with other findings. I think the Von Pirquet is of less value than the intradermal. In the former, unless great care is used, the tuberculin is apt to be removed before it can be absorbed. I have even seen children remove it by licking the place as soon as they thought they were not watched.

I think the D'Espine sign is a very valuable one and should be used more than it is. If those who make frequent examinations would employ it more and become more familiar with it they would find it a very valuable sign in recognizing the enlargement of the tracheo-bronchial glands.

TUBERCULOSIS OF THE KIDNEY

JOHN Z. MRAZ, M. D.

Oklahoma City, Oklahoma

The subject of Renal Tuberculosis is always one of great interest to the Urologist. This is as true of the various phases of the disease, which are still open to discussion as it is of those factors, which have been well established and relative to which there is general agreement among the profession.

While we are interested principally in the known facts which enable us to diagnose and treat a given disease, yet it is important to keep abreast of the theories advanced by recognized investigators. Many a theory becomes, when fairly tested, an accepted fact, which may materially modify our diagnostic or therapeutic methods often with mutual benefit to our patients and ourselves.

Tuberculosis of the kidney is a disease of young adult life and is practically always secondary to a focus elsewhere in the body as in the lung, lymphatic glands, bone, intestine, peritoneum or genitals.

Primary renal tuberculosis is so rare, as to hardly merit mention. Not more than

six or seven such cases are on record. Acute miliary form of the disease is but a part of a generalized tuberculous infection, which always rapidly proves fatal and in which the renal involvement is completely overshadowed by the general picture and is therefore of little practical importance.

Chronic renal tuberculosis, which is the form under discussion is usually hematogenous in origin, sometimes lymphogenous and, rarely, occurs as the result of direct extension from a neighboring organ as intestine or vertebra.

Most authorities believe that the common route of invasion is by way of the blood stream. By it only can we account for the cases that are secondary to a distant focus, as in a remotely situated bone for example. The fact that the earliest involvement is usually in or near the most vascular portion of the cortex, lends added strength to this view. On the other hand, the adherents of the lymphatic origin make the claim that only in this way can it be made clear why most cases are unilateral and it would also explain those cases, whose pathology shows that there had been a primary involvement of the renal pelvis, with secondary extension to the parenchyma.

In this connection, it is interesting to mention the Hypothesis of Noel Halle of Paris. He divides renal tuberculosis into three classes, as follows:

1. Cases of hematogenous origin, these attack the renal cortex first. They show a marked tendency to heal spontaneously and often do so. He believes, that many of the so-called kidney infarcts found at post mortem are in reality healed scars of a previous tuberculosis.

2. Cases of lymphogenous origin; these are cases that have a primary pelvic involvement and are always rapidly progressive ending in destruction of the kidney.

3. Cases showing a combination of features of classes one and two; if a case in class one fails to heal, it falls into class three when the process has extended to the renal pelvis. Likewise a case in class two becomes one of class three, when the process has extended from the pelvis into the kidney substance.

A. L. Chute agrees in the main with Halle, when he states in his hypothesis, that hematogenous renal tuberculosis is always bilateral at first, and tends toward spontaneous healing. If for any reason the process fails to heal in one kidney, then we

have a progressive tuberculous process, which sooner or later involves the entire kidney.

If we accept this view it would certainly make it easier to understand why a blood borne infection should so often be unilateral. He contends, that, while the process is bilateral, it is confined to the kidney parenchyma and gives no symptoms, that the process may become progressive in one kidney thereby involving the pelvis and producing recognizable symptoms and is unilateral by virtue of the fact, that the other kidney has in the meantime succeeded in freeing itself from infection.

Many authorities vehemently refute these ideas and maintain, that spontaneous healing never takes place in renal tuberculosis and, that once a kidney is attacked, it is doomed to complete destruction.

It is impossible to prove the hypothesis of Halle and Chute for the reason, that it is impossible to diagnose renal tuberculosis, while still confined to the parenchyma, and it is admittedly only those cases which become arrested and undergo healing. Once the kidney pelvis is involved it gives rise to definite symptoms and signs, which make its diagnosis possible.

Cases of this type are always progressive and never undergo spontaneous healing, unless one wishes to apply this term to those instances of occlusion with complete caseation or calcification of the entire kidney—the so-called auto-nephrectomy.

It is difficult to see, why an incipient renal tuberculosis should not occasionally heal in like manner, as occurs frequently in the lung and other organs. In reviewing the literature one finds a growing tendency on the part of some authorities to accept this theory as probably true.

While renal tuberculosis is secondary to other foci, the kidney is practically always the primary point of attack, so far as the urinary tract is concerned. The only exceptions to this rule are those rare cases of direct extension to the lower ureter from a seminal vesicle in the male, or fallopian tube in the female.

The very earliest symptom of kidney tuberculosis is often a frequency due to polyuria. Painful urination is soon added, due first to irritating products of inflammation, and later to secondary involvement of the bladder. These symptoms are usually progressively severe, and often associated

with slight terminal hematuria. Frank hematuria does occur, but in infrequent. Microscopic blood however, is nearly always present.

While bladder symptoms are usually the first and most prominent symptoms, about twenty per cent of cases present lumbar pain of a dull aching character as the only symptom. Such a case presented itself to the Oklahoma City Clinic recently. Diagnosis was made by cystoscopy, checked up by a positive guinea pig test. It is possible for a kidney to go on to complete destruction without a single kidney or bladder symptom. The only pain present may be in the healthy kidney from distention of the capsule due to compensatory hypertrophy.

General deterioration of health is common in well advanced cases, but is usually entirely absent early in the disease. The temperature is perfectly normal in the early period, later showing an evening rise, and cases of mixed infection may run a septic course. From the above it can readily be seen that the symptomatology may be anything but clear. For this reason a complete history should be followed by thorough physical examination. Urinary studies, cystoscopy and guinea pig test, when necessary.

It would be superfluous to consider the taking of the history or the physical examination in detail.

The urinary studies should include a chemical and microscopic uranalysis, smears and cultures. The findings will always give positive evidence, except in those rare cases with occlusion with secondary clearing up of the cystitis. In this event the urine may be of sparkling clearness, and free from abnormal findings.

With the exception of the cases just mentioned, albumen is always present and may come from the diseased kidney, or be due to a toxic irritation of the healthy organ. Red blood cells and pus cells are constant findings, and the urine is acid in reaction. The urine is sterile to culture unless mixed infection is present. In obtaining a specimen for a search for organisms the meatus should be carefully cleansed and the urine obtained by catheter to avoid contamination by the smegma bacillus which can only be differentiated from the tubercle bacillus by culture, or the guinea pig test.

We have found it quite difficult to demonstrate the tubercle bacillus in smears. Repeated smears thoroughly searched after

careful centrifugalization will probably be successful in the majority of cases.

A sterile pyuria in an acid urine containing red blood cells and acid fast bacilli is positive evidence of tuberculosis. The finding of tubercle bacilli without pus is not sufficient for it is well known that patients with pulmonary tuberculosis often have a bacilluria without any kidney involvement.

The guinea pig test is a valuable one when carefully done and should be employed when it has been impossible to find the bacilli in smears. The great disadvantage to this test is the time element, it requiring from five to six weeks to complete the test. Several attempts have recently been made to shorten the time required by this test.

Inoculation has been made following an X-Ray exposure to lower tissue resistance and liver inoculations have been tried. Also a preliminary injection of tuberculin has been given to increase the susceptibility of the pig. These experiments are not conclusive, as yet.

Cystoscopy is probably the most valuable diagnostic measure in renal tuberculosis. With proper care and gentleness cystoscopy is possible in the large majority of cases under local anesthesia alone. I have had to use nitrous oxide but rarely. It is usually satisfactory, but in some cases it fails to abolish the bladder reflex, making bladder distension impossible.

Some men are using spinal anesthesia in these cases with good success. While I have never used it, I intend to give it a trial should I find it impossible to cystoscope a case under local anesthesia or gas.

Bladder involvement occurs early in renal tuberculosis, the first change being an edema surrounding the ureteral orifice of the affected side. In a very short time tubercles are added and are usually found encircling the orifice or grouped near it. A little later these tubercles become superficial ulcers. As the disease progresses the circumference of the ureteral orifice becomes ragged and ulcerated, and later depressed, due to the retraction of the ureter forming the so-called golf-hole orifice. In late cases thick pus may be seen oozing out of the ureteral opening like tooth paste being squeezed out of a tube, as in a case I once examined. As the disease progresses the bladder becomes more or less generally inflamed, but the greatest intensity of involvement is always in the neighborhood of the ureteral orifice of the affected side.

Bladder capacity progressively diminishes until in the extreme cases it may amount to but a few cubic centimeters.

In a case with an acid pyuria negative to culture and containing red blood cells, any of the above described cystoscopic pictures would fully justify a definite diagnosis of renal tuberculosis. A few months ago I made a diagnosis on just such findings in a case, where urinary smears proved negative and the patient's condition was such that a six weeks wait for a guinea pig test was deemed inadvisable. The diagnosis was confirmed at operation.

The rare cases of tuberculous renal occlusion may show a normal bladder except that the affected ureter will be seen to be non-functionating. The ureters should be catheterized. This will give us additional information as to which kidney is involved, whether it is bilateral and will enable us to determine the functional activity of the non-tuberculous kidney. A pyelogram may also be of added help in showing a distorted pelvis or the typical fringing of the pelvic outline, and will usually give some clue as to the extent of the involvement and whether or not a stone is present. When concretions are found they are usually due to secondary calcification. For some unexplained reason tuberculosis rarely attacks a kidney which contains a stone.

Space will not admit of more than a few remarks relative to the treatment of this condition. All evidence goes to show that renal tuberculosis, when far enough advanced to give rise to definite findings, is practically always a progressive disease ending in complete destruction of the kidney. It has been further proven, that bilateral involvement is common in cases of long standing, and, that when this occurs the case is hopeless. And it has been shown that these cases are in continual danger of general tuberculous dissemination, as long as they are harboring an active focus.

Therefore, as a general rule it may be stated, that nephrectomy should be advised as soon after the diagnosis has been made as is consistent with the greatest safety to the patient. Contra-indications to this procedure are bilateral involvement and active tuberculosis elsewhere.

In occluded cases, where the process is apparently latent, and the patient's general health good, it is a matter of judgment as to what to advise. It should be remembered

however, that even these cases have been known to harbor active bacilli.

Secondary involvement of ureter, bladder and genitals, which always give rise to extremely distressing symptoms, show a marked tendency to clear up following the removal of the kidney.

An early nephrectomy, while these secondary lesions are still superficial, will usually bring about a rapid clearing up of symptoms caused by them. Therefore, the earlier the nephrectomy the quicker the return to health.

Local treatment for the bladder lesions is usually unsatisfactory. I have seen considerable benefit follow the use of mercurochrome. The Roosing phenol treatment and santalwood oil have proven unaffactive in my hands.

Finally, and I believe most important of all, we should not become so interested in the disease that we forget the patient. We must remember that the patient is tuberculous, and that nephrectomy is only an incident in the proper treatment of the case. In view of this he should be given appropriate pre and post-operative care to make him a better operative risk and, by increasing his resistance, aid him in throwing off the effects of the disease, thereby enabling him to regain as large a measure of health as may be possible in the individual case.

Summary

1. There seems no good reason to doubt the possibility of spontaneous healing of incipient tuberculosis of the renal parenchyma.
2. Cases which have involved the renal pelvis are always progressive and, with few exceptions, require nephrectomy for cure.
3. Symptoms are often inconclusive necessitating the employment of various diagnostic procedures of which cystoscopy is probably the most valuable.
4. General management suitable for tuberculous patients is indispensable if the best results are to be obtained.

PYELITIS IN PREGNANCY AND THE PUERPERIUM

J. A. HATCHETT, M. D.
Oklahoma City

Pyelitis as a distinct disease entity has in the past ten years accumulated a vast amount of literature. So much has been written on this topic that its further con-

sideration at this time may seem out of place. There is, however, at least one excuse that can be offered for its further study and discussion, namely, the mistakes which are being made in its diagnosis.

It is a fact of common observation that there is a resident proneness in the professional mind to give pyelitis a wrong name, and often to operate under this wrong impression. This, we think, is due to the making of a hasty, symptomatic diagnosis, not taking the time to make a careful and complete physical examination.

All through life the female is more susceptible to pyelitis than the male, and doubtless latent pyelitis is present in not a few women who become pregnant. This may account for the incidence of pyelitis in the early months of pregnancy before the pressure of the gravid uterus could by its size produce obstructive symptoms in normal ureters. Halstead in his report on twenty-four cases of pyelitis in the Sloane Hospital of New York City found the incidence to be 0.7 per cent. This percentage appears less than should be found in the nonpregnant woman, and pregnancy positively increases the liability to this infection.

If the frequency of pyelitis is based upon the examination of urine taken by ureteral catheterization, then many cases of pyelitis will not be included in the count. In the very nature of things a large percentage of cases must be recognized without a cystoscopy and ureteral catheterization.

If a catheterized bladder specimen of urine contains many pus cells, bacteria, epithelial cells from the pelvis of the kidney, with or without blood cells, and these urinary findings be associated with fever, frequent, painful, or burning urination, pain and rigidity of the abdomen, generally on the right side, and especially if there is pain on pressure in the costo-vertebral angle, the diagnosis of pyelitis is virtually made.

A greater frequency of obstetric pyelitis, and pyelitis in general, will doubtless be the verdict rendered when a greater number of cases have been studied and classified in the hospitals of our country. It is highly probable that many mild cases of pyelitis in obstetric practice have not been recognized. If there is no blocking of the ureter of the affected kidney then no constitutional symptoms may arise, but pus and bacteria are found in the urine.

Many varieties of micro-organisms are capable of producing pyogenic kidney in-

fections, but the bacteria most commonly found are the colon bacillus, staphylococcus, and streptococcus. Kretschmer in his study of two hundred cases of general pyelitis found the colon bacillus in 132 cases; staphylococcus in 28 cases; the streptococci in one case. The typical pyelitis of pregnancy is virtually a colon bacillus infection.

The causes of pyelitis may be classified hypothetically under three headings; first, the bacteriological causes; second, the mechanical causes; and third, the chemical causes. It is relatively common for the colon bacillus to be found in the urine of nonpregnant women, and more common still for this organism to be found in the urine of pregnant women.

Generally, however, this organism is inoperative unless some mechanical factor arises to produce by trauma a lowered resistance to infection in some portion of the urinary tract as an obstruction or compression of the ureters. This mechanical factor becomes operative by a stretching or twisting of the ureters such as takes place in the pregnant uterus as it gradually ascends from the pelvis and generally takes the position of right obliquity in the abdominal cavity. Acute pyelitis is rarely seen before the fifth month of pregnancy. At this time there is added to the stretching or twisting of the ureters the pressure of the growing uterus on the ureters as they pass over the brim of the pelvis. The pressure is nearly always more pronounced on the right side. At this point of greatest pressure the ureters rest on bone, while above and below they are loosely connected with soft structures. The ureters being thin and collapsed when empty and susceptible to great distension, it can be readily seen how pressure at these bony points can decrease the caliber of the ureters resulting in ureteric and pelvis distension with stagnant urine into which the colon bacillus by way of the lymphatics, the blood stream, or the intestines can gain entrance and form a stagnant pool of urine and pus similar to an abscess.

The gravid uterus in the last half of pregnancy also presses upon the intestines causing fecalstasis, fermentation and constipation, thus favoring an increased growth of the colon bacillus.

The physical type of the female with a slender body, flat abdomen, strong abdominal musculature, and small abdominal capacity has a tendency to keep the uterus well pressed backward and downward there-

by favoring increased pressure on the ureters and intestines. That the right kidney carries the burden of nephritic pathology has long been observed. The frequency of the downward displacement of the right kidney compared to that of the left is estimated to be as seven to one. Following repeated pregnancies the mobile right kidney is often found when looked for. It is probable that this frequent displacement and mobility of the right kidney, and its dragging on its pedicle causes congestion by interference with its circulation, thereby lowering its resistance to infection.

The chain of lymphatics and the nephrocolic ligament said to form a connection between the ascending colon and the right kidney may also contribute to the increased frequency of the right kidney to disease over that of the left; the former by affording a more direct route for the colon bacillus from the colon to the kidney, the latter by making a connection by which the weight of the ascending colon can be applied to displace the right kidney downward.

Urologists state when catheterizing the ureters a dilation is found above the pelvic brim, and that this dilation is more pronounced on the right side. Dr. Edward B. Cragan of New York found the right ureter more often dilated than the left in the dead bodies of women who had been recently pregnant.

Finally, as to mechanical causes, the right obliquity of the uterus and the usually right obliquity of the diameter of the presenting part of the fetus expose the right ureter to increased pressure over that of the left.

Dr. Frank Kidd, Surgeon in the London Hospital, states the cause of the dilation of the ureters as follows: "This dilation is not, I believe, caused by the pressure of the uterus, but is, I believe, a physiological dilation of the musculature of the ureters set up by chemical bodies or poisons circulating in the blood of pregnant women." He further states, "I think it is certain that the main predisposing cause of the pyelitis of pregnancy is dilation of the ureters. In some cases I have passed ureteric catheters and found that I could draw off immediately an excessive quantity of infected urine, which came away in a steady stream and not in drops as should be the normal fashion. I have noticed in the postmortem room that in fatal cases of eclampsia and other fatal cases of pregnancy there is acute dilation of the ureters. Dilation of both ureters therefore appears

to be a constant feature in pregnancy and to be set up by a chemical poison in the blood rather than by pressure of the enlarged uterus on the ureters."

DIAGNOSIS

A working diagnosis of pyelitis gravidarum is generally easy to make provided the physician will take the pains to make a careful complete physical examination, including a chemical and microscopic examination of the urine. In the average acute case he will often be able to make a presumptive diagnosis at the bedside before he has had a chance to get the urinary findings. Increased frequency of urination points oftener to a diseased kidney than it does to a diseased bladder. Frequent and painful urination combined with fever in a pregnant woman in all probability makes the diagnosis one of pyelitis; cystitis can be ruled out as it is not associated with fever. At the beginning of an acute attack there may be an absence of pus in the urine on account of the closure of the ureter of the affected kidney by congestion and swelling. An enlarged and tender kidney can frequently be palpated. If the ureter be blocked pus is not necessarily found in the urine, but tenderness over the costo-vertebral angle of the affected side is always present in acute cases.

Kretschmer in his study of two hundred cases found more than fifty per cent of them bilateral. By the aid of the ureteric catheter he found pus in both sides. In the bilateral cases one side is generally so lightly affected that its involvement could not be detected by other means than ureteral catheterization. Occasionally, however, the involvement of both kidneys may be strongly suspected by the increased gravity of the symptoms, by the patient's complaining of pain in both sides, and pain elicited in both costo-vertebral angles by pressure.

The clinical picture of obstetric pyelitis is more clearly defined than is pyelitis in other departments of medicine. It is more acute in its onset, has a higher range of fever, and is more often associated with the classic trio of infection, namely, "chills fever and sweats." It is often characterized by repeated exacerbations, remissions and intermissions of the distressing symptoms which may continue until the end of pregnancy. When the ureter of the affected side drains well the patient may be up and about the house, feeling well with no temperature, and a marked abatement of symp-

toms. If she is treated in a hospital she may recover from the acute attack in two or three weeks, return to her home and with the exception of an occasional upset, she may do very well. This, however, is more often the exception than the rule. More often the patient remains an invalid through the remainder of gestation after which a rapid recovery is expected.

Pyelitis is quite often diagnosed appendicitis. Many cases are sent to the hospitals for operation with the appendix label on them.

TREATMENT

In the preventive treatment of the pyelitis of pregnancy all primary and localized infections should be thought of and treated, if present, according to modern conceptions of good prenatal care.

Gastro-intestinal derangements as indigestion, constipation and intestinal fermentation should be looked for and corrected. Pregnancy predisposes to intestinal stasis, and though the patient may have a daily movement all cases of pyelitis are found to have large accumulations in the colon and rectum.

The medical treatment first to be instituted is bland diet, forced fluids and free catharsis. As a rule the urine is strongly acid which favors the action of the bacillus coli. The urine should be made alkaline as soon as possible by giving a teaspoonful of sod. bicarbonate or forty grains of potassium citrate every two hours until the urine is alkaline. The above dose should then be repeated every three or four hours, or often enough to continue the alkalinity of the urine for at least one week. The urine should be frequently tested with litmus paper. During this time the urotropin should not be given as it is inactive with alkalies.

Alternating the reaction of the urine from acid to alkaline appears to have good clinical results; but Dr. Kidd emphasizes the importance of keeping the urine alkaline for ten days in acute cases before beginning the acid phosphate of sodium and urotropin in the usual doses.

Dr. Kidd States: "What the exact meaning of the effects of the alkalies in these cases is difficult to determine, but that it exists is an undoubted fact which needs investigation of the biochemist. The solution of this question would, I feel sure, yield results of the utmost value to our knowledge of bacteria and their action on the body. If

only this alkalinising treatment were better known, a great deal of suffering and danger could be avoided."

To relieve the pressure of the ureter of the affected side the patient may be encouraged to lie on the opposite side. The knee-chest position for ten minutes three times a day tends to relieve nephritic congestion and promote drainage. Ureteral catheterization and pelvic lavage are rarely indicated in the acute stage. If the pyelitis should not clear up in the first two or three weeks of puerperium a skilled urologist should be consulted.

Often these patients appear profoundly sick and show emaciation, especially when the classic chills, fever and sweats are of frequent occurrence. But the ultimate recovery of so many of them under simple treatment and good nursing has struck thousands of doctors with a happy surprise. If the doctor is tempted to empty the uterus before the stage of viability he is almost sure to make a mistake. Better consult an experienced urologist first. If the pregnancy is not also complicated by toxemia the child will stand the pyelitis remarkably well. The prognosis for ultimate and complete cure in pyelitis must always be guarded. A patient once infected, if she becomes pregnant again, will very likely have a return of pyelitis.

The patient who has once had pyelitis should be thoroughly cured before she becomes pregnant again, and the subsequent pregnancy should receive unusual care and attention. I once had a patient who was bad with pyelitis in two pregnancies. To my surprise she had no trouble in the third. Such an experience must be rare. Pyelitis in pregnancy may be a serious complication, and all cases should have the most solicitous care, and the counsel of a urologist should unusual and dangerous symptoms arise.

Discussion: Dr. H. C. Brown, El Reno, Okla.

There is probably no other disease so frequently mistaken for appendicitis as pyelitis, unless it is *Tabes dorsalis*.

It has been said that a McBurney scar has come to be of diagnostic import in the diagnosis of *Tabes*. This equally holds true in pyelitis. One writer has said that 22 per cent of his cases of pyelitis had been previously operated for chronic appendicitis. These mistakes in diagnosis of course are

largely avoidable as a careful history, physical examination, chemical and microscopical urinalysis will in the great majority of cases reveal the true diagnosis. It is all the more important to differentiate pyelitis in pregnancy from some surgical condition demanding operation on account of the extra hazard of surgical procedure during that time.

Pyelitis in pregnancy has been grouped into three types:

1. Renal, with marked localized signs and symptoms pointing to one or the other kidney, but in the great majority the right.
2. General, without localized symptoms but marked constitutional symptoms.
3. Abdominal. Where the symptoms strongly simulate some acute or chronic surgical condition in abdomen as appendicitis. The urinary findings will obtain in all types.

I wish to emphasize what the essayist has said as to the happy results that so frequently obtain from simple treatment as outlined. Oftentimes what appears to be a severe infection and what might first appear to warrant an interference with pregnancy will clear up in a most satisfying way. First rendering the urine alkaline and keeping it so for several days, then rapidly rendering it acid and at the same time administering Hexamethylene-tetramine has been the most effective treatment in my hands. The Colon bacillus which is the infective agent in a large percentage of these cases is a facultative organism. It thrives naturally in an acid media but can gradually accommodate itself to an alkaline media; therefore by changing the reaction of the urine rapidly at a few days intervals it keeps the organism groggy so to speak and renders it more easily destroyed.

Discussion: Dr. W. A. Fowler, Oklahoma City, Oklahoma.

In this excellent paper, Dr. Hatchett very rightly emphasizes the importance of diagnosis. If we inquire of every patient for the symptoms of frequent urination, pain or burning on urination, nicturia, and lumbar pain, and if we examine every patient by gentle hammer percussion over the kidney area and by palpation of the kidney through the abdominal wall, and if we examine the urine of every patient microscopically, we will find that this condition is

very much more frequent than is generally supposed.

The treatment which Dr. Hatchett outlines is in keeping with that recommended by the best urologists at this time. I believe that rest is of great importance and that posture is of great benefit in favoring drainage. If there is good drainage, frequent urination and dysuria are the only symptoms. With the impairment of drainage, pain, fever, chills and other septic symptoms become prominent.

With high fever, tenderness and pain, I believe that drainage should not be neglected too long. If posture and general measures do not give relief, drainage is perhaps best accomplished by the introduction of the urethral catheter up to the pelvis or the kidney. Very few cases, however, would require this procedure. Polak leaves this catheter in for twelve hours when it is removed, being reintroduced in twelve hours again as needed for drainage. I believe that lavage under-pressure may do harm and should not be practiced in these cases.

Vomiting, when it is markedly out of proportion to the other symptoms, is suggestive of cortical infection as a complication. The vomiting is probably due to the resulting peritoneal irritation. The prognosis is much graver in these cases. During the last year and a half, I have observed two such cases; one of which had a nephrectomy; the other resulted fatally, autopsy revealing multiple cortical abscesses of both kidneys. The last case developed during the puerperium.

Discussion: Dr. T. C. Sanders, Shawnee.

Pyelitis is a subject which always interests me, since, for the past several years I have given quite a bit of thought to this condition, particularly in children. Pyelitis is a disease which may simulate many other conditions and is sometimes very hard to diagnose, and in all probability is many times overlooked. Our chief trouble in diagnosing it in babies is in being always able to obtain a specimen of urine, around the microscopical examination of which the diagnosis seems to rest. This being true, it strikes me, a proper diagnosis could be more easily made where it complicates pregnancy, since a catheterized specimen of urine can usually be obtained.

"SOME OBSERVATIONS ON PYELITIS."

Read in the Medical Section of the Oklahoma State Medical Association, Oklahoma City, Oklahoma, May 9-10-11, 1922.

L. A. MITCHELL, M. D.
Frederick, Oklahoma

This paper is written by a general practitioner of medicine for the general practitioners who compose a large percent of this section. No attempt is made to present an elaborate study of the bacteriology or pathology, but rather to call your attention to some common-place facts which we meet almost every day. The class of cases to which I am calling your attention is seen first in nearly all cases by the general practitioner.

Pyelitis is defined as an inflammation of the pelvis of the kidney. It is now known to be the cause of a large number of conditions accompanied by fever of obscure nature. I became interested in this disease early in my practice, as so many cases were seen in children which showed fever, vomiting and prostration, and which cleared up clinically in a few days. This was commonly known as Billiousness. It was soon discovered that if the ailment was not due to some evident acute infection, or the throat, the urine would show pus. The acute cases were sometimes followed by a chronic pyelitis which became a focus of infection. The infectious process may extend upward to the kidney proper, and produce a pyelonephritis or indeed minute abscesses of the kidney.

Pyelitis has been found in infants only three days old. It is more common in artificially fed children, and is often thought to be a disturbance of nutrition. Female children furnish about eighty per cent of the cases. This fact has led to the theory of its origin by upward extension through the urethra, bladder and ureter. Most cases are caused by the Colon Bacillus, it being a normal inhabitant of the alimentary canal, it is held that infection reaches the urinary tract by improper methods of cleaning the baby. For this reason mothers and nurses are instructed to clean the anal region from before backward instead of the opposite direction. Other observers maintain that the infection reaches the kidney pelvis through the lymphatics and the blood stream. This theory appears to be very plausible in view of an efficient treatment based on the instillations into the rectum of solutions which, when they are absorbed,

travel the same lymphatic route as the infection. There is direct connection between the right kidney and the colon, and the right kidney is more often involved than the left. Pyelitis is frequently the sequel of tonsillitis, scarlet-fever, and other diseases caused by pyogenic bacteria, such as erysipelas. Gonococci, Bacillus Paratyphosus, and other bacteria may be the causative factor. It has been shown that pyelitis may become quiescent for a long period of time, and show up later, as in pregnancy. A kink in the ureter will predispose to the disease by causing a congestion of the kidney and its pelvis. Lumps of pus may temporarily occlude the ureter, and thus lead to pyonephrosis, or indeed perinephritic abscess. At this time no pus will be found in the urine, provided the infection is unilateral. Some cases show extensive damage to the kidney substance, there being only a rim of fibrosed, functionless tissue left. A freely moveable kidney also seems to predispose to pyelitis, and some cases are relieved by restoring the normal position of the kidney by lying in bed.

The point of most importance in the diagnosis is to suspect the presence of pyelitis. Let us not be satisfied with a diagnosis of Billiousness until we have made a microscopic examination of the urine. If, in addition to the ordinary symptoms of so-called Billiousness, we find pus in the urine, we may safely make the diagnosis of pyelitis, provided we can rule out cystitis. There will usually be few symptoms referable to the urinary tract, but there may be frequency of urination. The urine is cloudy and acid in reaction. It must not be forgotten that when the ureter is occluded by pus, there will be none in the urine at that particular time, and frequent examination will have to be made. A cystoscopic examination will not only show whether you have a cystitis, but will also show which kidney pelvis is involved. The pus which comes from the ureteral orifice may be due to a stone in the kidney pelvis, and thus an X-Ray examination should be done before any radical treatment is instituted. Hammer percussion over the kidney region posteriorly will elicit extreme pain in most cases. I have seen tenderness in the region of the lower ribs anteriorly in a number of cases, and want to ask if others have seen the same sign. It must not be forgotten that pyelitis will often simulate appendicitis. The tenderness is nearer the border of the ribs, and rigidity is not so marked as in appendicitis. The colic may be present, but

if you will notice carefully the fever comes on earlier in pyelitis than it does in appendicitis. Hence is not a bad idea to examine the urine in suspected cases of appendicitis, especially in the early months of pregnancy.

The prognosis is not considered unfavorable. If recognized early and proper treatment is instituted, recovery is the rule. In children with nutritional disturbances, the outlook is not so favorable. Those cases found in pregnancy usually clear up quickly when pressure is taken off the ureter by delivery.

Under the subject of treatment, Dr. Abt of Chicago says that copious amounts of water taken internally stands first. Insist on the patient taking more water than is its custom. The rendering of the urine alkaline with Sod. Bicarbonate or Pot. Citrate in five or ten grain doses three or four times a day is a favorable treatment. This is especially effective in that form of pyelitis due to the Colon Bacillus, as it does not thrive in an alkaline medium. This alkaline treatment seems to render useless another very useful drug in our armamentarium, Urotropin. To my way of thinking, this is easily the most effective medical treatment, but it does not act in an alkaline medium. The alkali and the urotropin may be alternated, each drug being given by itself for a few weeks at the time with happy results. I have several cases which have shown no recurrence after six or more years after a prolonged course of urotropin. Rectal instillations of a solution of Methylene blue has proved effective in some cases. Recently good results have been obtained with lavage of the kidney pelvis with a one-half per cent solution of Silver Nitrate. It not only clears up the case clinically, but also renders the urine sterile. From one to four treatments have cured the most resistant cases. Vaccines have been used extensively with indifferent results. Best results have been reported from the use of autogenous vaccines. In long standing, obstinate cases, surgery in the form of pelvic drainage or nephrectomy will have to be resorted to.

Discussion: Dr. T. S. Chapman, McAlester.
Mr. Chairman and Gentlemen:

To me this is a very important subject, and one that we average physicians are apt to overlook. I feel quite certain that we have all made the mistake of treating these patients in a rather indefinite or empirical

way for "billiousness" as the doctor says, or some other equally vague intestinal disorder, when, if we had exhausted every means at hand to make a diagnosis, all doubt would have been removed and treatment instituted that in a great majority of cases would promote the recovery of the patient.

This condition, as the essayist states, most often occurs in young children and infants. My own personal observation does not show that females are so much more frequently affected than males as statistics show. There is no doubt in my mind that the artificially fed infant is much more subject to pyelitis than the breast fed.

The doctor's "observations" and conclusions are so clear and convincing that I feel it would only be a waste of your time should I attempt to discuss this paper at any great length, for it would be a repetition of what you have already heard. I do wish, however, to emphasize what he says in regard to confusing this condition with appendicitis. It has been done. And as Dr. Mitchell well says: "The point of most importance in diagnosis is to suspect that pyelitis is present" and then prove it or disprove it before we conclude the appendix is involved and call in a surgeon, for looking at things from the angle he does he may agree with you.

After diagnosis is made to my satisfaction it has been my plan to give a brisk cathartic, if this has not already been done, and it usually has been, because we generally have a chain of symptoms something like this: coated tongue, foul breath, nausea or vomiting, rigors, loss of appetite, elevating of temperature and if the pain happens to be in the right side, that makes you think of appendicitis, and even when it is a little too high and more pronounced posteriorly than in front, we may still be in doubt and have in mind a "retrocecal" appendix, but if we are careful and, as Dr. Mitchell says, "suspect" pyelitis, and have the urine examined under the microscope, we will be relieved of doubt in the matter.

When this has been done, I put my patient to bed, keep him on a liquid or semi-solid diet—milk, principally—and alternate with big doses of Urotropin and Acid Sodium Phosphate, each at four hour intervals, and in adults and older children I insist on them taking a full glass of water at each of these two hour intervals, and infants all the water they can be induced to take.

After a few days in bed on this treatment with frequent urinary examinations,

and just when there begins to be some irritation from the Urotropin and the acid urine, I leave off the Urotropin and Acid Phosphate and for the next few days resort to alkalies, for the double purpose of destroying the colon bacilli and relieving the irritation caused by the acid urine.

I have no doubt that lavage of the kidney pelvis with a weak solution of a silver salt is a splendid plan in obstinate cases, but as so many of these cases occur in infants, or very young children, it must be obvious to all that it would be impractical to attempt it in all cases, however stubborn they might be.

ACUTE AND CHRONIC SALPINGITIS AND TREATMENT

JAS. L. SHULER, M. D.
Durant, Oklahoma

To present the subject of Salpingitis, in all of its phases, would certainly cover a field of thought so far reaching that we fear would fail to be interesting, on account of the many causes, complications, and results; therefore we shall only attempt to consider, briefly, this subject; also, we find the subject under consideration so closely allied with diseases of other pelvic organs that it will be found very difficult to clearly set forth the causes and results that we wish to present, without considering also Ovaritis, endometritis and some localized pelvic infections.

The Fallopian Tubes, or Oviducts, are situated one on either side of the female pelvis in the free margin of the broad ligament, extending from each superior angle of the Uterus, along the sides of the pelvis. This organ is usually about four inches in length, the canal in the Tube is very minute and is a continuation of the Vaginal and Uterine canal, the canal in the Tube is very small throughout the greater part, but toward the distal end gradually becomes larger, contracting at its termination, the distal opening communicates with the Ovary and the peritoneal cavity, being especially protected by the Fimbriae.

As set forth in the brief anatomical description we find the Fallopian tube especially situated to receive infections from the Vaginal and Uterine cavities, very especially so some infections which are more definitely prone to follow mucus tracks, than are other germs which are even more virulent in effect, yet less inclined to force

their way through closed orifices as we may term the opening from the Uterine cavity to the mucus membrane of the tube.

It should be no great surprise then that we have such a vast number of infections of this organ; the greater surprise is that we do not have even more, when we come to consider the exposure of the Vaginal and Uterine tract to the varied chances of infection.

We shall first consider the most common cause of infection of the Tube, the cause which has become so generally known and almost exclusively recognized as the cause of infection of the pelvic organs, not only considered so by the profession, but by the laity. We find by statistics that Gonorrhoea produces, by far the greater proportion of infections, acute and chronic, of the Fallopian tube. As a general proposition, as given by some authors, the gonococcus is the only germ that will spontaneously invade the normal, non-puerperal uterus and tubes. There are, of course, some exceptions, perhaps, in children where we may expect that the mucus membranes of the uterus and of the Tubes are less resistive, as we find the case of children in childhood diseases, but the exception is very rare, in respect to these organs.

Purulent inflammation beginning in the vagina or uterus extending on to the tubes, may be considered as almost certainly Gonorrhoeal. This, of course, should be confirmed by excluding the chance of a recent puerperal condition which might give the chance of infection from other Bacterial causes, as from the use of instruments or puerperal possibilities. The probability of Gonorrhoeal infection is increased if the infectious symptoms began within a few weeks after marriage. Again, we must not overlook a fact that in some instances the vaginal and uterine disturbances in Gonorrhoea were not sufficient to be specially noticeable, but where inflammation in the tubes and pelvic area began without any very apparent cause; also we must not overlook the possibility of gonorrhoeal origin where acute symptoms follow miscarriage or a full term pregnancy, as we may by careful inquiry, find that a specific infection had existed previous to delivery or even antedating pregnancy. Demonstrations are claimed where specific germs, gonorrhoeal, have remained dormant in the lower genital track for a time and immediately extend upward through the uterus and to the tubes and peritoneal cavity following a labor or

miscarriage. The extension of gonorrhoeal infection is almost sure to be along the uterin mucosa into the tube, and this germ of infection very seldom passes through the tissues. The characteristic lesion of gonorrhoea is to produce pyosalpinx, and usually without involving the ovary, or of producing general peritonitis and we may state that the greater proportion of pus tubes are caused from gonorrhoeal infection.

In the clearly gonococcic infections the bacteria are usually found to be absent within two to four months after infection. In some instances bacteria may be found after several months or a year, but the virulency of the infection will have passed till there is slight chance of setting up active inflammation in operating in such cases.

The time limit of immunity in Tubo-gonorrhoeal infections is to some degree, speculative and upon this account a conservative delay should, in all cases, have first consideration, before operative treatment is resorted to. Also we must not forget that active gonorrhoeal pus even though in a seeming quiescent mass, will cause serious complications if interfered with. Another reason for giving time before resorting to operative measures, is many of the pelvic inflammatory masses and perhaps pus tubes, disappear or subside to such an extent, as to render almost complete relief to the patient.

Special thought should be given to the ordinary means of treatment, of the recently infected tube, or which may be better, special attention to the vaginal and endometrial involvement before the infection reaches the tube and in this stage of infection, I would give first place in treatment to the use of bacterines. In all specific (Gonorrhoeal) infections we have no means of treatment that will give the results that we may obtain from the proper use of gonorrhoeal bacterins or phylacogens, but to get results, this remedy must be administered promptly in sufficient dosage and often repeated. One C. C. of Mulford's, or P. D. Phylacogen, (or any reliable make of Bacterin is all right,) given twice daily and increased in amount, should within a few days modify the acute symptoms and has a very great influence in preventing extension to the Fallopian tubes, and even after infection in the tubes, I have thought, often controlled the inflammatory process to such an extent as to limit the inflammatory exudate and save the tube from a virulent accumulation.

In conjunction with this is rest in bed, cold or hot applications, and other palliative measures. I think just at this point, careful warning should be given that no operative disturbances be resorted to, such as, curetment or uterin sounding or manipulation whatever; however, vaginal antiseptic irrigation might be appropriately given.

I wish to lay special stress upon the extreme majority of infections of the tube from the gonorrhoeal bacteria as a guide to the admissibility of operative procedure, as an operation for removal of infected tubes and ovaries or localized or unlocalized abscesses in the pelvic cavity when from this cause, when sufficient time has elapsed for immunity of the involved organ and surrounding area by death of the specific bacteria. There is no definite time limit after infection for guidance, however, we might say four months would make an average time for safety, yet a much earlier date might be accepted for operation, and especially, if disturbing symptoms should exist; however, if the general symptoms are gradually subsiding, I think it best to give much longer time, even six to twelve months; as often the inflammatory area immediately surrounding an infectious deposit will gradually subside and leave a field of operation in a much more favorable condition.

As previously indicated in this paper I wish to especially stress the importance of differentiating between gonorrhoeal and streptococcic infection of the tubes and adjacent organs. The principal differentiating thought must depend upon the circumstances under which infection takes place. If infection should take place following ordinary labor or abortion, we should usually conclude that we have the streptococcic infection, but this should be considered in conjunction with other symptoms.

In contra distinction to the operative procedure and safety in gonorrhoeal infection of the tube and adjacent pelvic organs it must be borne in mind that streptococcic infections afford much more unfavorable results in operative treatment, from the fact that this bacteria does not lose its virulency by lapse of time, and when possible, to control severe symptoms; otherwise operative procedure should ordinarily be delayed or not resorted to at all; however, abdominal operation should be advised in acute disturbances, when in spite of palliative measures the trouble is showing a serious tendency and threatening the life of the patient.

The ultimate result of acute salpingitis depends greatly as to the virulency of the infecting bacteria.

If the patient can be tided over the acute stage of an attack without operation the following terminations may take place. In the course of time the germs are destroyed, the pain disappears, the serous exudates are greatly absorbed, the patient comes to feel well and the functional activity is seemingly restored, in such cases some adhesions remain. It should be noted that a favorable termination is less likely to take place from gonorrhoeal infection than from other infections. The danger to life is not so great as in other forms of infection, but the final danger to health is much more marked in a larger proportion of cases and the acute trouble is followed by more serious chronic pelvic inflammation, causing sterility and other lasting results. The sterility being due to the resulting infiltration and adhesions that include the tubes. A large percent of acute tubal infections result in chronic conditions of the tubes and surrounding tissues with the attendant mass of exudate with a focus of chronic inflammation which acts as a source of constant irritation, causing pain, menstrual disturbances and frequent attacks of pelvic peritonitis.

Discussion: Dr. J. S. Hartford, Oklahoma City.

I wish to confine my remarks principally to gonorrhoeal salpingitis. It is well to think of the pathology of this condition; we remember that the infection follows an infection of the urethra, the vagina, the cervix, and is carried along the mucous membrane of the uterus into the tubes where there is an inflammation of the tube which involves not only the mucous membrane but the wall of the tube, causing it to kink upon itself and if the inflammation continues the distal end of the tube is sealed up and the proximal end is closed, developing in the tube. A fluid may or not be pus, the tube falling back into the cul de sac where it may become adherent to intestine, uterus or ovary.

I believe that acute salpingitis should be treated in a palliative way; rest in bed; ice bag to abdomen; hot vaginal douches, two gallons at a time, two or three times a day with retention enema of four to six ounces of normal saline solution, given every three to six hours as advocated by Kuhn. Many of these cases will clear up under this treat-

ment and unless the tube is permanently closed will recover with functioning tubes. After two or more attacks the patient becomes operative and salpingectomy should be done with a careful consideration of the circulation of the ovary as to the development of future cysts.

Dr. A. L. Blesh, Oklahoma City.

In this paper the author has covered a wide range. The paper in connection with the set discussions leaves but little territory uncovered.

So widely did the author range however, that of necessity some points were not made altogether clear.

First, I cannot agree that an acute process is of itself a contra-indication to operation, although I am well aware that in saying this I am opposing myself to most authorities. As to the salvage of infected tubes, my experience is distinctly unfavorable. In what appeared to be unilateral involvement at the time of operation, the apparently good tube being conserved, the patients have returned to me or gone elsewhere subsequently to have the remaining tube removed. This is especially true of gonorrhoeal tubes. Realizing the persistence of this infection elsewhere, even in accessible locations, less ought not to be anticipated here in a location absolutely inaccessible to treatment.

We have demonstrated in our clinic that the idea that there is a special danger in surgically attacking acute salpingitis is a lingering superstition founded upon tradition. This same tradition stayed our hand for a long time in acute appendicitis and cholecystitis and cost many lives and a great deal of morbidity.

Second, in the conservation of the ovaries and uterus after salpingectomy there is something to be said. The uterus and ovaries will as a rule be found dragged down in the pelvis by the heavy tubes where they are usually found bound down firmly by adhesions. If now the tubes are simply enucleated and the ovaries and uterus left as they are, they will continue to cause trouble and the ovaries will in addition undergo cystic degeneration and will ultimately have to be removed with the uterus. As a secondary operation this will often be most difficult. It has been our custom in the Oklahoma City Clinic to suspend the ovaries to the parietal peritoneum anteriorly and fix the uterus flatly by its anterior surface to the abdominal fascia, leaving no

open spaces for intestinal incarceration. This procedure has contributed much in our hands in ovarian conservation and the subsequent comfort and well being of the patient.

Third, a few remarks relative to the kind of infection we are dealing with may not come amiss. In a broad way, it is possible to say at the time of the operation in chronic cases whether it is a gonorrhoeal or a streptococcic infection. In the gonorrhoeal types a line of cleavage is as a rule easily found by the enucleating finger of the surgeon. This is probably due to the fact that the process being chronic or at most sub-acute, time enough exists for a leucocytic cofferdamming of the infected area from its surrounding, thus more or less segregating the diseased from the normal tissues. On the other hand the streptococcic types are more acute and tend to leucocytic infiltration and an actual fusion and no line of demarcation results.

THE TUBERCLE BACILLUS

The science of bacteriology is still too young to afford any very detailed pictures of the life history of the micro-organisms with which it deals. It is not long ago that they were usually depicted in the guise of the most baneful enemies to mankind. Thus there are accounts of "the swarms of germs present almost constantly in our noses, throats, stomachs, bowels, etc.," awaiting the chance they have been looking for—to break through the cell barrier and run riot in the body. The beneficent work of bacteria has received recognition more tardily. To the species which help rather than hinder the tasks of mankind and the higher animals, *Long has paid this well deserved tribute:

Some of these are very adaptable, wonderfully equipped foragers, not overly particular, within reasonable limits, about the temperature at which they work or the form in which the great classes of food-stuffs are supplied to them. They grow in relatively large masses, many dying that others may live, and in their process of dissolution many kinds of them liberate powerful ferments which make more food available for the rest. In view of their relation to organic decay they have received the name of "saprophytes." Etymologically they are decay-growers. They live their day, grow, die and decay themselves, and by virtue of their involuntary sacrifice serve the high purpose of maintaining those great cycles of the elements in which a certain amount of carbon, nitrogen and sulphur is continually available in a mobile state suitable for the nutrition of other forms.

There are bacteria of other types which serve no such useful purpose. Some of them are extremely helpless in "the region of bounteous plenty outside." They crave a condition of parasitism in which almost inevitably they come into conflict with the body cells of the host. The modern story of immunology tells of the devices by which many marauding micro-organisms are converted from dangerous enemies into harmless guests.

For obvious reasons, the bacillus of tuberculosis has been the subject of more intensive study than have most of the other harmful bacteria. Its metabolism, the product which it elaborates, the reactions which it excites, and the modifications which it may undergo in different environments are some of the topics which have received investigation in recent years. We recall few more trenchant descriptions in the study of disease than that which Long has given of the first link in the progression of tuberculosis, the tubercle bacillus: "a wax-armored micro-organism, maintaining itself in necrotic tissue, picking and choosing its nutriment from the heterogeneous mass set before it, utilizing the glycerol of hydrolyzed fats, and probably building its wax therefrom, taking ammonia from certain of the amino-acids produced in the digestion of dead protein, utilizing others directly to speed up the process of synthesis of its own protein, autolyzing to a slight extent, sufficiently to sensitize the surrounding host to its diffusible protein products, being carried by the lymph, by phagocytes and otherwise, to new soil, there to be met by a non-specific foreign body response, which in the end operates to produce anemia and death of the isolated cells." Then we have the failure of that dead tissue to autolyze, Long adds, perhaps because of the presence of ferment-inhibiting substances within the bacillus—the phenomenon of caseation. Finally, he concludes, there is more or less absorption of foreign protein from that focus, that of the bacillus itself and that of the disintegrating tissue, both toxic to the body protoplasm, both capable of causing fever and stimulating the metabolism of the host, so that in severe cases the typical picture of consumption ensues. Such a masterful summary would have been impossible only a few years ago, because of the meagerness of our knowledge. Today it points the way to the further investigation of prophylaxis and therapy.—*Jour. A. M. A., Dec. 2, 1922.*

*Long, E. R.: *The Biochemistry of Tuberculosis*, Bull. Johns Hopkins Hosp. 33:246 (July) 1922.

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Local news of possible interest to the medical profession,
notes on removals, changes in address, deaths and weddings will
be gratefully received.

Advertising of articles, drugs or compounds unapproved by the
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matter of fair reciprocity.

EDITORIAL

MUSKOGEE'S SOLDIER HOSPITAL ACCEPTED.

The State Hospital, at Muskogee, erected by direction of the Oklahoma Legislature at a cost of \$500,000 has been initiated, passed the gamut of every conceivable attack, been weighed and found not wanting in any particular, inspected by departmental sleuths without number and in the final verdict, holds the stamp of the highest Federal approval. This is due to the action of the Veteran's Bureau, Washington sending a commission headed by Dr. Hugh Scott, Acting Director of the Bureau to Oklahoma to investigate the matter and then, after approval, sign a lease which in effect conveys the institution to the Bureau.

The building is now complete except the very minor finishing touches and it is thought it will be ready for occupancy by the first of the year. No announcement has been made as to who will be appointed as Superintendent.

This ends a long, discouraging task, and ends it with great credit to the State of Oklahoma and the commission directed by the State to erect the buildings. Everyone connected with the work speeded it to the utmost, so rapidly was it accomplished that it is a matter of congratulation that Oklahoma is one of three states only, which, so far have provided adequate hospitalization facilities for veterans of the World War. Physically, architecturally and from every standpoint the institution could hardly be improved. Erected to withstand the ravages of time it has one of the most beautiful settings to be imagined. Its location, Honor Heights Park, is one of the highest eminences in this part of Eastern Oklahoma and from every angle the visitor is given a view of a magnificent country consisting of river valley, plains, distant hills and an attractive little city. Its connection with the City of Muskogee is by electric lines and modern roads, so that no one having occasion to visit it will be occasioned trouble.

It is expected that patients will be received about the first of the year.

DO NOT FORGET YOUR COUNTY SECRETARY.

Our members are advised that every county secretary has been supplied with the necessary remittance blanks for his use for transmission of dues for the year 1923. In this connection it should not be overlooked that, as a rule, the task of collecting and forwarding dues is "wished on" to the secretary, that he is not paid, that it is just as much the business and duty of the member to help his secretary by promptly sending in the small amount necessary, as it is the business of the secretary to waste his time in the thankless task, so, **SEE YOUR SECRETARY** should be your immediate concern. It must not be forgotten either that failure to have your name in good standing in the office of the State Secretary before the end of January can cause you an unnecessary and useless financial loss all out of proportion to the small amount of dues collected. The annual dues are \$4.00, that is **if they are paid in January**, after that time the dues are \$6.00. That is a very small matter compared with the possible

loss, we yearly note, due to neglect of the matter in the loss falling upon the member who suddenly finds himself confronted with a malpractice suit, but who has forfeited his right to defense simply because he neglected the small warnings voiced above. In order to settle the matter and be right about it SEE YOUR SECRETARY.

Editorial Notes - Personal and General

H. C. Council, Kinta, writes the JOURNAL that there is room at that point for a competent physician. Those interested are requested to write him.

Dr. L. Haynes Buxton, Oklahoma City, has filed suit asking \$53,000 damages alleging personal injuries received when a beam used repair work on the American National Bank, fell and seriously injured him.

Dr. R. M. Church, Stilwell, has moved to Claremore.

Dr. A. L. Mobley, Lehigh, has located in Eufaula.

Dr. A. C. Lucas, Castle, and Miss Grace Phillips were married in Okemah November 20th.

Dr. W. H. McBrayer, Idabel, was painfully injured when his car skidded into a ditch near Hugo. Dr. McBrayer was transporting a patient to the hospital when the accident occurred.

Dr. A. S. Risser, Blackwell, read a paper on "Appendicitis" at the meeting of the Tri-County Medical Society, when physicians of Cowley and Sumner Counties, Kansas and Kay County, Oklahoma, met at Wellington, Kansas, November 16th.

Mrs. Benjamin H. Brown, Muskogee, offers for sale the library of the late Dr. Benjamin H. Brown, which is one of the best collection of works ever noted. Those interested should write Mrs. Brown.

Dr. Geo. H. Wallace, Cheyenne, has located in Duncan.

Dr. John R. Walker, Enid, was recently elected president of the Kiwanis Club of that city.

Drs. J. E. Hughes and F. L. Carson, Shawnee, "brought back a deer" after a hunting trip in the Kiamitchi Mountains early in December. Dispatches do not indicate which of the gentlemen shot the deer.

Drs. C. M. Bloss and Robert Keyes, Okemah, have purchased a site and begun the erection of a hospital building.

Greer County Medical Society elected the following officers for 1923: President, J. B. Hollis; vice-president, E. W. Mabry; secretary-treasurer, E. M. Poer; Mangum. Delegate, C. C. Shaw, alternate Frank H. McGregor, Mangum.

Pittsburg County Society—President, McClellan Wilson; vice-president, C. T. Harris, Kiowa; secretary-treasurer, F. L. Watson; delegates F. J. Baum, J. W. Echols; censors J. C. Johnstone and L. C. Kuykendall, McAlester.

Rogers County elected: President, Wm. P. Mills; vice-president, George Strickland; secretary-treasurer, L. H. Henley, Claremore; delegate, W. A. Howard, Chelsea.

Pushmataha County elected: President, H. C. Johnson, Antlers; vice-president, George Robinett, Albion; secretary-treasurer, J. A. Burnett, Crum Creek; censor, J. C. McGinnis, Antlers.

Ottawa County Society elected: President, R. H. Harper; vice-presidents, J. D. Bewley, Miami, E. S. Leisure, Afton, I. Phillips, Picher; secretary-treasurer, G. Pinnell, Miami.

Creek County Society met in Sapulpa December 7th. Dr. R. M. Sweeney acted as toastmaster, presenting Mrs. G. H. Wetzel, who tendered the toast "To the Doctors," and Mrs. Ben C. Harris, who gave a recitation. Dr. Ralph V. Smith, President-elect of the State Association and Mrs. Smith were guests of the occasion. The election of officers resulted in Drs. W. G. Bisbee and E. W. Reynolds, Bristow, being selected as president and secretary-treasurer for 1923.

DOCTOR GEORGE S. TURNER

The people of Pittsburgh County in general and the members of the Pittsburgh County Medical Society in particular were shocked and grieved to hear of the sudden death of Dr. George Samuel Turner of Krebs, Oklahoma, which occurred at his home the night of Oct. 25, 1922.

Dr. Turner was born in Boone County, Missouri, April 1, 1870. He was the son of George and Elizabeth Turner. His medical education was obtained at the Missouri Medical College from which institution he graduated in 1895. In 1897 he was married to Eugenia Stewart and to this happy union were born two children, Lowell and George, both of whom are now students of Oklahoma State University.

Dr. Turner established himself in the practice of medicine in Krebs, Oklahoma, in 1898, and during all these years he has religiously devoted himself to taking care of the physical ills of the people of this locality. His willingness to always care for these people and give them the best possible service, irrespective of their ability to pay, endeared him to the hearts of all with whom he came in contact.

Dr. Turner has held office in his County Medical Society, and was a member of the State and American Medical Associations. His active membership in many fraternities speaks of the high esteem in which he was held by his fellow-men. He was a member of the M. W. A., A. O. U. W., A. F. & A. M., 32 Scottish Rite, Knight Templar and Shriner.

The Pittsburgh County Medical Society at a special meeting drafted appropriate resolutions which were presented to the family. This society attended Dr. Turner's funeral in a body and in every manner showed their great respect for their departed colleague.

Abstracts, Observations from Current Medical Literature

THE WORK OF THE A. M. A. CHEMICAL LABORATORY

When some seventeen years ago the Council on Pharmacy and Chemistry began its work of turning the light on proprietary medicines, its main concern was to let physicians know the composition of many of the proprietary medicines widely advertised in medical journals. At that time the exposure of false or vague and meaningless declarations of identity was considered of basic importance. This fact is shown by the name of the Council and by the appointment of such men as Harvey W. Wiley, then chief of the U. S. Bureau of Chemistry; his associate, Lyman F. Kebler, an authority on drug analysis; Martin I. Wilbert, noted for his work in scientific pharmacy; Samuel P. Sadtler, then professor of chemistry at the Philadelphia College of Pharmacy, and Professors C. S. N. Hallberg and W. A. Puckner, then teachers at the University of Illinois School of Pharmacy. This need for work which would bring home to the medical profession the essential secrecy of the drug preparations which they were asked to prescribe led also to the establishment of the A. M. A. Chemical Laboratory under the directorship of Professor Puckner.

The initial report of the Council gave the medical profession the first definite statement of the composition of some of the acetanilid mixtures then so widely exploited as headache remedies. Following this came reports from the Council which gave the results of chemical analyses of such proprietaries as "Tyree's Antiseptic Powder," "Uron," "Thialon," "Sulpholythin," "Labor-dine," "Campho-Phenique," "Oxychlorin" and "Saliodin." Though many of these preparations were offered to the profession as new chemical discoveries and endowed with imaginary and bizarre chemical formulas, they were, in fact, simple mixtures of well known chemicals, and their analysis presented little difficulty.

As a result of this work of the Council and the laboratory, most promoters of pharmaceutical specialties today know better than to invest money in the exploitation

of mixtures the sale of which could be interfered with when once the inevitable happens and the composition of the nostrum is disclosed. But this does not mean that today the composition of all proprietaries is correctly declared. Through ignorance, incompetence or by design, proprietary medicines are still to be found sailing under false colors with regard to their composition. The work of the Chemical Laboratory, however, has become more difficult with these changed conditions. Instead of analyses of mixtures of well known drugs, the laboratory has to do not with the obvious, but with new compounds of novel composition which possess neither the chemical composition nor the constitution ascribed to them. The report of the Council on Pharmacy and Chemistry on "Galyl" that appears in this issue * is an example of the more difficult character of work now required of the laboratory.

When "Galyl" was first put on the market, it was claimed to be—and probably was—a compound consisting of two arsphenamin molecules linked together by phosphorus groups. Its administration, however, required manipulations which made its preparation for injection as difficult as that of arsphenamin. With the growing popularity of neo-arsphenamin, the manufacturer of Galyl felt the need of an improved, easily administered preparation. The result was the "new" Galyl which is now on the market. This is to be had in solution ready for administration or in the form of a powder which is easily prepared for injection. Fortunately for the profession and public, if unfortunately for the promoter of Galyl, the A. M. A. Chemical Laboratory investigated this preparation and reached the conclusion that giving this product amounts to the administration of arsphenamin (in the form of the sodium compound) with extraneous inorganic material, and that the "new" Galyl is an unessential and useless duplication of the well established arsphenamin.

Involved and difficult as this work was, it is of the greatest value to our profession, for it obviates the need of comparative clinical trials of Galyl with arsphenamin. The work of the A. M. A. Chemical Laboratory makes it almost certain that Galyl is, for all practical purposes, nothing more than sodium arsphenamin.—J. A. M. A., Nov. 11, 1922.

*Galyl: Propaganda for Reform Department, page 1706, Journal of the Amer. Med. Ass'n. of Nov. 11, 1922.

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DESIRED.

To the Editor:

I am endeavoring to make a complete study of the distribution of human actinomycosis in this country. The number of cases reported in the literature is surprisingly small, and I know that the disease is not so rare as is sometimes thought. I shall greatly appreciate hearing directly from any one who has had experience with this disease, and desire to know concerning case histories the following: age, sex, occupation, residence, state in which the disease was contracted, location of lesion, duration of symptoms, and any special points of interest connected with the treatment, outcome of the disease, or necropsy findings.

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